

For Reference

NOT TO BE TAKEN FROM THIS ROOM

Ex LIBRIS
UNIVERSITATIS
ALBERTAEENSIS





Digitized by the Internet Archive
in 2020 with funding from
University of Alberta Libraries

<https://archive.org/details/Dumont1971>

THE UNIVERSITY OF ALBERTA

SOME FACTORS WHICH DISTINGUISH EARLY SCHOOL LEAVERS
FROM HIGH SCHOOL GRADUATES IN THE HIGH
PRAIRIE SCHOOL DIVISION NO. 48

by



FRED J. DUMONT

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE
OF MASTER OF EDUCATION

DEPARTMENT OF INDUSTRIAL AND VOCATIONAL EDUCATION

EDMONTON, ALBERTA

FALL, 1971

Thesis
(271) F
63

UNIVERSITY OF ALBERTA
FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read and recommend to the Faculty of Graduate Studies for acceptance a thesis entitled, "Some Factors Which Distinguish Early School Leavers from High School Graduates in the High Prairie School Division No. 48," submitted by Fred Joseph Dumont in partial fulfillment of the requirements for the degree of Master of Education.

.
Supervisor

.

.

Date.

ABSTRACT

The purpose of this study was to investigate the reasons for withdrawal of students prior to graduation from the high schools of the High Prairie School Division No. 48. In terms of grade IX examination results, and other records, socio-economic information about the family and demography of the area in which the family derives its livelihood, the study was designed to obtain evidence that would aid in identifying major associated and predictive factors which lead to early school leaving.

The main hypothesis of the study was that there would be significant differences between early school leavers and graduates when certain selected factors were statistically analyzed and that these differences would be useful to identify potential early school leavers.

Nine problem areas were identified and stated as null hypotheses. The main hypothesis was tested by applying statistical tests to the nine null hypotheses.

The study involved a total of 700 high school students of which 436 were graduates and 264 were early school leavers. Through a matching procedure using scholastic ability, age and sex as control variables, 362 students were selected: a study group of 97 boys and 84 girls who had left school prior to graduation and a control group of 97 boys and 84 girls who graduated from high school with a high school diploma or senior matriculation. A statistical analysis was

carried out by several methods on these groups.

It was concluded that certain factors which can be identified early in a student's career, can be used with a certain degree of confidence to distinguish the potential early school leaver from the potential graduate. Significant differences were found between the study groups and the control groups on socio-economic status, attendance, formal schooling of parents, program offered by the school in which the student is registered, ethnicity and achievement level on the reading, English language arts portion of the grade IX examination. There was also some indication that certain variables were more useful in distinguishing girl rather than boy early school leavers from graduates.

ACKNOWLEDGEMENTS

The writer expresses his gratitude to J. F. D. Ilott, Chairman of the committee for guidance and helpful criticism during the development of this thesis. Appreciation is extended to Dr. H. Ziel for the encouragement and advice he gave the writer during the course of his studies. Helpful assistance was provided by the central office staff, High Prairie School Division, and by high school principals. Finally, sincere thanks are expressed to my wife Margaret and daughter Linda for the help, patience, and understanding which was gratefully received during the completion of this study.

TABLE OF CONTENTS

	Page
LIST OF TABLES	ix
LIST OF FIGURES	xiii
 Chapter	
1. INTRODUCTION	1
THE PROBLEM AND DEFINITION OF TERMS	1
THE PROBLEM	3
Statement of the Problem	3
Sub-Problems	4
PURPOSES AND NEED FOR THE STUDY	5
LIMITATIONS OF THE STUDY	6
SOURCES OF DATA	7
DEFINITIONS	7
Definition of Terms	7
ASSUMPTIONS	9
HYPOTHESES	9
ORGANIZATION OF THE REMAINDER OF THE THESIS	11
2. REVIEW OF RELATED RESEARCH	12
CONCERN FOR THE EARLY SCHOOL LEAVING PROBLEM	12
REASONS FOR EARLY SCHOOL LEAVING	14
IMPROVEMENT OF HOLDING POWER	19
ABILITY AND THE EARLY SCHOOL LEAVER	24
SOCIO-ECONOMIC FACTORS	27

Chapter	Page
PREDICTIVE FACTORS STUDIES	30
ACHIEVEMENT FACTORS	32
SUMMARY OF CHAPTER 2	34
3. ORGANIZATION OF THE HIGH PRAIRIE SCHOOL DIVISION NO. 48 . . .	35
LOCATION AND SIZE	35
COMMUNICATIONS	37
ADMINISTRATIVE ORGANIZATION	38
GEOGRAPHIC ZONES	41
Demography of Zones	42
SOCIO-ECONOMIC PROFILE	47
Population Characteristics	48
Trends and Age Group Distribution	49
Level of Wealth	55
Educational Level of Residents of Area	61
FACILITIES FOR EDUCATION AND STUDENT POPULATION	63
School Facilities	63
High Schools	66
Teaching Personnel	69
Student Retention	72
4. COLLECTION, ORGANIZATION, AND TREATMENT OF DATA	74
COLLECTION OF DATA	74
Sample Selections	75
ORGANIZATION OF DATA	75
TREATMENT OF DATA	75
SUMMARY OF CHAPTER 4	76

Chapter	Page
5. FINDINGS OF THE STUDY	77
DESCRIPTION OF THE SAMPLES	77
Socio-Economic Characteristics	79
Scholastic Ability, Grade IX Records, and Attendance . .	83
INTERRELATIONS AMONG VARIABLES	86
SOCIO-ECONOMIC ZONES	90
ATTENDANCE	94
GENERAL ACHIEVEMENT	99
PROGRAM	103
OCCUPATIONAL CLASS	106
PARENTS' FORMAL SCHOOLING	112
READING ABILITY	116
ENGLISH LANGUAGE ARTS	120
ETHNICITY	124
SUMMARY OF CHAPTER 5	129
6. SUMMARY, CONCLUSIONS, IMPLICATIONS AND PROBLEMS FOR FURTHER INVESTIGATION	130
SUMMARY	131
CONCLUSIONS	132
DISCUSSION OF FINDINGS AND CONCLUSIONS	134
Ethnic, Social, Economic and Environmental Factors . . .	134
Scope of Program and Grade IX Scholarship Factors	136
IMPLICATIONS AND RECOMMENDATIONS	139
TOPICS FOR FURTHER STUDY	141
BIBLIOGRAPHY	143
APPENDIX	155

LIST OF TABLES

Table	Page
1. Population Characteristics of Zone 1 Residents	50
2. Population Characteristics of Zone 2 Residents	50
3. Population Characteristics of Zone 3 Residents	50
4. Mother Tongue of Students Enrolled in Schools in Zone 1 on September 30, 1970	51
5. Mother Tongue of Students Enrolled in Schools in Zone 2 on September 30, 1970	51
6. Mother Tongue of Students Enrolled in Schools in Zone 3 on September 30, 1970	52
7. Population by Zones in School Division from 1961-1970	52
8. Population by Selected Age Groups Zones 1, 2, 3 and Alberta .	54
9. Selected Aspects of Taxation--1970	57
10. School Foundation Plan Grants Paid to School Authorities Compared to Requisitions Paid into Provincial Fund by Collecting Authorities 1970	59
11. Social Assistance Paid to Persons in Region by the Provincial Government During a One-Year Period--1970 . . .	59
12. Social Allowance Number of Cases and Rates of Occurrence High Prairie School Division Region and Alberta July, 1967.	60
13. Population Five Years of Age and Over Not Attending School by Highest Grade Attended, 1961	62
14. Enrolments in All Grades in All Schools in the High Prairie School Division Since 1963	64
15. Enrolments in High Prairie School Division Schools by Grades and by Zones September 30, 1970	65
16. Enrolments in Schools Operated by Other Authorities Whose High School Students Attended the High Prairie School Division Centralized High Schools September 30, 1970 . . .	67

Table	Page
17. Student Population Served by High Schools in High Prairie School Division September 30, 1970	68
18. Enrolments and Credit Offering High Prairie School Division High Schools--1970	70
19. High Prairie School Division Comparison of Enrolments and Number of Teachers Employed	70
20. Years of University Training High Prairie School Division Teachers--1970	71
21. Percentage of Students Leaving School by Highest Grade Attended	73
22. Sampling Distribution by Zone, Sex and Groups	78
23. Chi-Square Analysis of Socio-Economic Zone of Boys with Girls in both the Study Group and the Control Group	80
24. Chi-Square Analysis of Occupational Class of Parents of Boys with Girls in Both the Study Group and Control Group .	81
25. Chi - Square Analysis of Ethnicity of Boys with Girls in Both the Study Group and Control Group	82
26. T(t) Test of Mean Scholastic Ability, Reading, Language Arts and General Achievement Stanine, and Year's Attendance in Days for Boys, Girls, and Combined Study Groups	84
27. T(t) Test of Mean Scholastic Ability, Reading, Language Arts and General Achievement Stanine, and Year's Attendance in Days for Boys, Girls, and Combined Control Groups . . .	85
28. T(t) Test of Mean Scholastic Ability, Reading, Language Arts and General Achievement Stanine, and Year's Attendance in Days for Boys and Girls of the Total Sample	87
29. Linear Correlation Matrix for Mean Scores on Scholastic Ability, Reading Ability and Attendance for the Combined Study and Control Group	88
30. Linear Correlation Matrix for Mean Scores on Scholastic Ability, Reading Ability and Attendance for the Study Group	89
31. Linear Correlation Matrix for Mean Scores on Scholastic Ability, Reading Ability and Attendance for the Control Group	91

Table	Page
32. Chi-Square Analysis of Socio-Economic Zone for the Study Groups and Control Groups	92
33. Chi-Square Analysis of Socio-Economic Zone for the Boys' Study Group and the Boys' Control Group	93
34. Chi-Square Analysis of Socio-Economic Zone for the Girls' Study Group and the Girls' Control Group	95
35. T(t) Test of Mean Year's Attendance in Days of Study Group and Control Group	96
36. T(t) Test of Mean Year's Attendance in Days of the Boys' Study Group and Boys' Control Group	97
37. T(t) Test of Mean Year's Attendance in Days of the Girls' Study Group and the Girls' Control Group	98
38. T(t) Test of Mean Stanine of General Achievement of the Study Group and the Control Group	100
39. T(t) Test of Mean Stanine of General Achievement of Boys' Study Group and Boys' Control Group	101
40. T(t) Test of Mean Stanine of General Achievement of Girls' Study Group and Girls' Control Group	102
41. Chi-Square Analysis of Program Offered in School for the Study Group and the Control Group	104
42. Chi-Square Analysis of Program Offered in School for the Boys' Study Group and the Boys' Control Group	105
43. Chi-Square Analysis of Program Offered in School for the Girls' Study Group and the Girls' Control Group	107
44. Chi-Square Analysis of Occupational Class of Parents of the Study Group and the Control Group	108
45. Chi-Square Analysis of Occupational Class of Parents of the Boys' Study Group and the Boys' Control Group	110
46. Chi-Square Analysis of Occupational Class of Parents of the Girls' Study Group and the Girls' Control Group	111
47. Chi-Square Analysis of Grade Level Attained by Parents of the Study Group and the Control Groups	113

Table	Page
48. Chi-Square Analysis of Grade Level Attained by Parents of the Boys' Study Group and the Boys' Control Group	114
49. Chi-Square Analysis of Grade Level Attained by Parents of the Girls' Study Group and the Girls' Control Group	115
50. T(t) Test of Mean Reading Ability Stanine of the Study Group and the Control Group	117
51. T(t) Test of Mean Reading Ability Stanine of Boys Study Group and Boys' Control Group	118
52. T(t) Test of Mean Reading Ability Stanine of Girls' Study Group and Girls' Control Group	119
53. T(t) Test of Mean English Language Arts Stanine of the Study Groups and the Control Groups	121
54. T(t) Test of Mean English Language Arts Stanine of the Boys' Study Group and the Boys' Control Group	122
55. T(t) Test of Mean English Language Arts Stanine of the Girls' Study Group and the Girls' Control Group	123
56. Chi-Square Analysis of Ethnicity for the Study Groups and Control Groups	125
57. Chi-Square Analysis of Ethnicity of Boys' Study Group and Boys' Control Group	126
58. Chi-Square Analysis of Ethnicity of Girls' Study Group and Girls' Control Group	127
59. Summary of Levels of Significant Differences Between the Study Groups and the Control Groups, and Boys and Girls . .	128

LIST OF FIGURES

Figure	Page
1. 1971 Map High Prairie School Division	36
2. Zone 1 (I.D. 124)	43
3. Zone 2	45
4. Zone 3 (M.D. of Smoky)	46
5. Percentage of Enrolled Students Leaving School Prior to Graduation	73

Chapter 1

INTRODUCTION

I. THE PROBLEM AND DEFINITION OF TERMS

For all its current urgency in the public concern, early school leaving is not a new phenomena. It shall be an inevitable fact of the educational process, so long as successful high school graduation is not compulsory. Ironically, this century has witnessed a steady and impressive growth in school retention rates. Schreiber¹ states that at the turn of the century not more than six or seven of 100 United States grade nine students graduated four years later. By 1930, the proportion had risen to one-half; at present, it stands at about two-thirds. Hohol² indicated that the Alberta statistics showed a similar trend. It is the problem, not the fact, of early school leaving which is contemporary and this problem, though it revives a range of fundamental educational questions, is initially posed by forces and contingencies largely extrinsic to the school.

To begin with, the sheer number of young people born after World War II who passed through the schools and into the labor market

¹D. Schreiber et al., Project: School Dropouts (National Education Association, Washington, D.C., 1964), p. 3.

²Albert E. Hohol, "Factors Associated with Drop-outs," Alberta Journal of Educational Research, 1:1 (March, 1955), p. 9.

during the decade of 1960-70 is unprecedented.³ Over the decade some two million new young people with extremely varying preparations and capabilities entered the labor market.⁴ At least one-third of them were early school leavers equipped with few if any job qualifications; and one-half of these early school leavers had less than eight years of formal schooling. In themselves, these figures merely suggest the dimensions of the problem. The essential problem has not so much to do with numbers as with the fact that the world of work to which these early school leavers seek entrance has a diminishing place for them. The present unemployment problem⁵ can be considered a prime sponsor of the early school leaving problem. New aspirant workers are not unemployed because they left school prematurely, but rather because the kinds of jobs for which their preparation or lack of it qualified them, are, under the impact of automation and technological advancement, fast disappearing.⁶

The growing rural-urban migration⁷ compounds the problem. While the number of low skill jobs decreases because of technological development in urban centres, the supply of unskilled labor emigrating

³ Canada Yearbook, 1970, Dominion Bureau of Statistics (Ottawa: Queen's Printer, 1970), p. 3.

⁴ Ibid., p. 43.

⁵ Dominion Bureau of Statistics, Monthly Report on the Working Force in Canada (Ottawa: Queen's Printer, February, 1971).

⁶ Schreiber, op. cit., p. 3.

⁷ Alberta Department of Municipal Affairs, The Municipal Counselor (May, 1971).

from the rural areas simply adds to the oversupply.

It is the complex of these crises--the youth population boom, unemployment, labor market revolutions, migration--that has forced the early school leaving problem to be a critical one. None of these factors has intrinsically to do with the educational system, yet it is difficult to envisage a satisfactory solution along any route other than education.

II. THE PROBLEM

Statement of the Problem

The main purpose of this study has been to investigate the high school withdrawals in the High Prairie School Division No. 48 during a three-year period. The study was designed to determine what factors distinguish the early school leaver from the graduate and to analyze the relationship of these factors to factual information secured from school records at the grade nine level.

On the basis of literature surveyed, ten sub-problems were stated as null hypotheses. Relevant variables are as follows:

1. Occupational class of parents
2. Highest grade reached by father
3. Credit offering of high school attended
4. Socio-economic zone of residence
5. Mother tongue
6. Sex
7. Age

8. Attendance record
9. Reading achievement
10. Scholastic ability
11. Language arts achievement
12. General academic achievement

Sub-Problems

1. Is there a difference in the socio-economic area in which the family resides between the early school leaver and the graduate?
2. Is there a difference in the attendance record between the early school leaver and the graduate?
3. Is there a difference in the general academic achievement level between the early school leaver and the graduate?
4. Is there a difference in the program offering of the school which the student attended between the early school leaver and the graduate?
5. Is there a difference in the occupational class of parents between the early school leaver and the graduate?
6. Is there a difference in grades reached by fathers of early school leavers and those that graduate?
7. Is there a difference in the grade IX reading achievement score between the early school leaver and the graduate?
8. Is there a difference in the language arts achievement score between the early school leaver and the graduate?
9. Are there differences in the home language of the family between the early school leaver and the graduate?

III. PURPOSES AND NEED FOR THE STUDY

The drop-out problem is a serious social problem in our society today. Increasingly, it is a society where the high school diploma assumes the function of both a certificate of employability and an admission ticket to those occupations less susceptible to unemployment. Census data⁸ indicates how especially rigidly the correspondence between education and occupational status holds at the lower strata. Two-thirds of the unemployed employables have less than a grade nine education in an economy where the rate of unemployment has not fallen below five per cent in over five years. In this light, the early school leaving problem is especially significant. Any student who leaves school prematurely and who could have been retained in an educational program is likely to contribute less to society. It is therefore necessary for school systems to identify the measures that can hold potential early school leavers in school until they complete an educational program preparatory to admission to post secondary institutions.

Schools have a responsibility to students, parents and to all members of society to educate the youth of today to the fullest extent. Any possible method that can be established to assist in meeting this goal will contribute to a better educated citizen.

The need for local systems to make intensive investigations of

⁸Dominion Bureau of Statistics, The Unemployed Employables (Ottawa, April, 1971), p. 8.

their early school leavers to supplement province and dominion wide studies has been recognized as important at arriving at some early sound remedial measures.⁹ No systematic investigation has previously been carried out in the High Prairie School Division No. 48.

IV. LIMITATIONS OF THE STUDY

The study has the following limitations:

1. The conclusions reached are limited by geography and other factors found in typically rural areas of Alberta.

2. The Blishen occupational class index¹⁰ may have been made less reliable by unknown factors involved in the various communities forming part of the High Prairie School Division.

3. The determination of Mother tongue of students may be a limitation since it was impossible to accurately determine the extent of use of the mother tongue as a language of communication.

4. The designation of socio-economic zones has limitations because the application of the assessment variable did not in itself distinctly differentiate the zones.

5. The method used to determine size of high school may be a limitation since total credit offering does not in itself distinctly differentiate the schools.

6. The matching procedure followed may be a limitation since it

⁹J. W. Chalmers, "Dropouts in Alberta Schools," Curriculum News Letter, No. 16 (Fall, 1961) p. 5.

¹⁰B. R. Blishen, et al, Canadian Society Sociological Perspective (Toronto: The MacMillan Company of Canada Ltd.), 1961.



was impossible to match the study group and the control group by exact day and year of birth, and scholastic ability.

V. SOURCES OF DATA

During the school years 1968-69, 1969-70, and 1970-71, collection of background information was made on all students who registered in the four high schools of the High Prairie School Division No. 48. Additional information was gathered from the statistical sections of the Superintendents' Annual Reports to the ratepayers and annual reports to the Department of Municipal Affairs.

Data of a general nature was obtained by studying accounts of studies which were carried out concerning Early School Leavers in Alberta and the United States.

VI. DEFINITIONS

Definition of Terms

Total group population: In this study refers to all students who were in attendance in the four high schools of the High Prairie School Division No. 48 for the school years 1968-69, 1969-70, 1970-71, taking grades ten, eleven, and twelve.

Early school leaver: Refers to a student who has left school for reasons other than graduation, transfer to another school, pregnancy, or illness.

Potential study group: Refers to the group of students who dropped out of school and were categorized as Early School Leavers by the

criteria used in this study.

Study group: In this study refers to the group of students from the potential study group who were matched on scholastic ability, sex, and age with students in the control group.

Potential control group: Refers to the group of students who completed diploma or matriculation requirements and graduated in June 1969, 1970, and 1971 in the High Prairie School Division No. 48.

Control group: In this study refers to the group of students from the potential control group who were matched on scholastic ability, sex, and age with students in the study group.

Socio-economic zone: Refers to the general level of wealth within a specific area. For purposes of this study, property assessment per capita was used as a criteria to measure level of wealth.

Occupational class: Refers to the classification of occupations by means of a scale developed by Blishen. In this study, the classes in the Blishen scale were combined to yield five main occupational class groups. The father's occupation was the basis for determining occupational class of the family. If the father was deceased or had left the family, the mother's occupation was used to determine occupational class.

Mother tongue: Refers to the predominant language of oral communication used in the home by the mother or father, or both from the time the child was born.

Scholastic ability: Is defined in terms of the stanine score obtained by the student on the Department of Education grade IX

scholastic ability test administered each year as part of a battery of tests to determine eligibility to enter high school. The stanine is calculated by plotting test scores for all grade IX students in Alberta on a graph forming a bell-shaped curve. A nine-point scale is used to interpret percentile ranks resulting in stanine ratings range of 1 to 9.

VII. ASSUMPTIONS

1. The main assumption was that students who experience difficulty in reading and language arts were the ones who dropped out in senior high school. The study was designed to test this assumption.
2. It was assumed that the opportunity to remain in high school for the year was practicable for all students.
3. It was assumed that student replies to socio-economic questions were a valid source of information on each student's family background.

VIII. HYPOTHESES

The main hypothesis derived from research was that there would be significant differences between early school leavers and non-leavers when certain selected factors were statistically analyzed.

The sub-problems in this study are restated below as null

hypotheses; these were tested for the study group and the control group, the boys' study and control group and the girls' study and control group.

1. There is no significant difference in the socio-economic zone in which the family resides between the early school leaver and the graduate.

2. There is no significant difference in the attendance record in grade IX between the early school leaver and the graduate.

3. There is no significant difference in the general achievement level on the grade IX examination between the early school leaver and the graduate.

4. There is no significant difference in the total credit offering of schools which students attend between the early school leaver and the graduate.

5. There is no significant difference in the occupational class of parents of students between the early school leaver and the graduate.

6. There is no significant difference in the grade level attained by the father of the student between the early school leaver and the graduate.

7. There is no significant difference in the Grade IX reading achievement score between the early school leaver and the graduate.

8. There is no significant difference in the language arts achievement score between the early school leaver and the graduate.

9. There is no significant difference in the home language of the family of the students between the early school leaver and the

graduate.

IX. ORGANIZATION OF REMAINDER OF THE THESIS

Chapter 2 reviews selected research with emphasis upon those studies which studied the nine variables considered in the sub-problems as well as making recommendations that are valid in the solution to the problem of early school leaving.

Chapter 3 deals with the organization of the High Prairie School Division No. 48, and describes its geographical, sociological and physical attributes.

In Chapter 4, the organization, collection, and treatment of data assembled from the records of the High Prairie School Division No. 48 is outlined.

Chapter 5 presents the results of the descriptive and statistical analysis of the data, and the test of the hypotheses.

The last chapter contains general conclusions reached and statements of recommendations for further study and possible solutions to the problem of early school leaving in the High Prairie School Division No. 48.

Chapter 2

REVIEW OF RELATED RESEARCH

Research on the problem of early school leavers is extensive so a review of all related literature is impracticable. The purpose of this chapter is to present a review of selected literature which influenced the design of the study and is organized under seven main topics.

I. CONCERN FOR THE EARLY SCHOOL LEAVING PROBLEM

Canadian¹ and American² studies indicate that in the average public school system fifty per cent of the students who enter high school do not remain to graduate. Alberta ranks relatively high in holding power according to census data.³ Monographs,⁴ the Lazerte

¹Canadian Education Association, "Your Child Leaves School " Second Report of the Research Committee on Practical Education, Canadian Education (February, 1950), p. 16.

²Harold J. Dillon, "Early School Leavers, A Major Educational Problem," National Child Labor Committee (New York: 1946), p. 9.

³Canadian Education Association, "The First Report of the Canadian Research Committee on Practical Education," Canadian Education, IV:2 (March, 1949), p. 38.

⁴D. B. Black, R. S. MacArthur, and J. G. Paterson, "Pupil Personnel in Alberta Secondary Schools," Monographs in Education, No. 6 (University of Alberta: August, 1958), p. 17.

Report⁵ and articles⁶ show, however, that a large number of Alberta students in the fifteen to nineteen age group are not attending school.

Another source⁷ states that forty per cent of American children drop out of school before graduation. Beyond these, tens of thousands of other youngsters are underachievers. These drop-outs and under-achievers represent a tragic waste of the resources of our young people at a time when our country needs their fullest productivity.

Martin⁸ concluded that the concern for the drop-out has been increasing because of advancing technology. A high school or an equivalent technical diploma is an absolute necessity for many occupations, and a university education is required for an increasing number of fields.

The concern for this problem is so great that educators say that the task of determining ways in which students can be retained to complete high school is one of the most important issues in education today.

⁵M. E. Lazerte, "Student Retention in Canadian High Schools," The Alberta School Trustee, XXIV:2 (February, 1954), p. 20.

⁶J. W. Chalmers, "Drop-Outs in Alberta Schools," Curriculum News Letter, No. 16 (Fall, 1961).

⁷Solomon O. Richter, et al., The Drop-outs (New York: The Free Press of Glencoe, 1962), p. 5.

⁸George E. Martin, "A Survey of Factors Related to Drop-outs in Grade IX in Newfoundland Central High Schools in 1961-62" (unpublished Master's thesis, The University of Alberta, Edmonton, 1964).

II. REASONS FOR EARLY SCHOOL LEAVING

The factors associated with withdrawal according to one investigator⁹ number three hundred and one, and another¹⁰ listed eighty-five. The problem is further complicated by the fact that some of these factors may influence the same student in different ways at different times. In his Doctoral Dissertation, done at the University of Georgia in 1953, Cook reported that:

Drop-outs result from a multiplicity of factors which when operating together present the individual student with seemingly insoluble problems most easily met by dropping out of school.¹¹

The most thorough research in Alberta into studies of why students leave school was made by Hohol.¹² This review of a collection of research that attempts to ascertain the reason for drop-out concludes that no one factor seemed to be solely associated with drop-out, but rather a collection of interrelated factors that tended to accumulate, some starting at an early age and developing to a climax in senior high school.

In his drop-out study, Gordon J. Rancier reported that the most

⁹Richard H. Dreschner, "Factors in Voluntary Drop-outs," The Personnel Guidance Journal (January, 1954), p. 287.

¹⁰A. E. Hohol, "A Review of the Evidence of Why Youth Leave School" (unpublished Master's thesis, The University of Alberta, Edmonton, 1954), p. 9.

¹¹E. S. Cook, "An Analysis of Factors Related to Withdrawal from High School Prior to Graduation," Journal of Educational Research (November, 1965), p. 196.

¹²Hohol, op. cit., pp. 1-279.

significant reason for students dropping out of school was related to the lack of vocational course offering. The early school leaver was revealed as a student who has met with very limited success in the academic program of the school.¹³ It would appear, then, that dissatisfaction with the school program seems to be a major characteristic of the early school leaver. Other studies have corroborated these findings. A United States Labour Department report, "School and Early Employment Experiences of Youth," is quoted as saying that "much more common (reasons for leaving school) were dissatisfaction or boredom with school or teachers or both."¹⁴

In a Canadian early leaving study done by the Research Committee on Practical Education, the most important single reason given for early school leaving was "lack of interest" and this reason, the report added, was "common to all grades."¹⁵

Another reason commonly given by the early school leaver is a desire to work rather than continue his education because it appeared more relevant to life than school. One writer quoted the United States Office of Education as saying that the "number one reason for dropping

¹³G. C. Rancier, "Case Studies of High School Drop-outs," (unpublished Master's thesis, The University of Alberta, Edmonton, 1962).

¹⁴St. Christopher House, School Drop-Outs. . . Our Disinherited Youth (Toronto: 1962), p. 1.

¹⁵Canadian Education Association, "Your Child Leaves School," Second Report of the Research Committee on Practical Education, Canadian Education (February, 1950), p. 18.

out seems to be preference to go to work rather than stay in school."¹⁶

Lichter stated it this way: "The drop-outs left school because they were motivated to 'run away' from a disagreeable situation."¹⁷ A lack of interest in school and school programs was also found to be a significant cause of students leaving early by Garavelle in his study, "The Drop-Out Problem." He is quoted as saying:

Disinterest in school because of no apparent relationship of the high school program to their own needs and characteristics is an important factor for the drop-out.¹⁸

In his study, Gushaty stated that dropping out to seek employment was the most important reason given by his students for leaving school, with fifty-two per cent stating this as their main reason for withdrawing; however, twenty-two per cent stated a lack of interest in school as their main reason for leaving.¹⁹ Since most studies conclude that "lack of interest" in school and "preference for work" are almost indistinguishable, it would follow that the main reason given by eighty per cent of the students in the Gushaty study belongs in a "school is uninteresting" category.

Many of the studies reported in the literature claimed that the

¹⁶ Martin, op. cit., p. 15.

¹⁷ Lichter, et al., op. cit., p. 247.

¹⁸ Office of Secondary and Vocational Education, St. Paul Public Schools, "Second Drop-Out Study," (St. Paul, Minnesota: 1961), p. 56.

¹⁹ Metro Gushaty, "An Analysis of the Causes of High School Drop-outs in Southern Alberta from 1947 to 1951" (unpublished Master's thesis, The University of Alberta, 1952).

school curriculum might not be suited to the students' needs and that this resulted in the students becoming disinterested in school.

Livingstone felt that the early school leaver often does not relate himself successfully to either his peers or his teachers and ceases to participate in either the activities of the classroom or the extra-curricular activities of the school.²⁰ As a result the early school leaver fails to apply himself in any serious way to his work at school. This lack of application could be partly cause and partly effect of his lack of interest in school. One early leaver summed it up this way:

After you fail a couple of times and you don't like the subject and don't do your homework you sort of give up and start acting up with the teachers. Naturally you start thinking about getting a job.²¹

Martin²² was of the opinion that a dislike of the subject could be caused by failure in it or, conversely, the failure could be a direct result of a dislike for the subject, a dislike which may have many causes other than failure.

Dillon,²³ in his study of thirteen hundred Indiana, Michigan, and Ohio youth, determined that the school was responsible for sixty-nine per cent of the reasons that students left school before graduation. Smith,²⁴ in his study of 383 Syracuse school leavers, found that 62 per

²⁰A. Hugh Livingstone, "High School Graduates and Drop-outs," The School Review, LXVI (June, 1958), p. 200.

²¹St. Christopher House, op. cit., p. 6.

²²Martin, op. cit., p. 19. ²³Dillon, op. cit., p. 24.

²⁴Harry P. Smith, "Supreme Youth Who Did Not Graduate," The Clearing House, XXXI:1 (February, 1957), pp. 383-90.

cent of the reasons for school leaving directly attributable to the school. Johnson and Legg²⁵ discovered that 67 per cent of the 440 youth whom they studied had left school because they were discontented with some aspect of the school program, and Kitch and McCreary²⁶ support these findings in their report that 57 per cent of the reasons that 500 California youth had for leaving school were associated with school dissatisfaction. Martin²⁷ discovered that 80 per cent of the 130 Newfoundland early school leavers withdrew for reasons that lay chiefly with the school.

As we have seen, according to many of the studies reported in the literature, a high proportion of early school leavers give as their reason for doing so, one connected with the school. This would seem to suggest that a great part of the responsibility for reducing the number of early school leavers lies with the school and the school must seek ways of increasing its holding power over the students which it serves.

²⁵Elizabeth S. Johnson and Caroline Legg, "Why Young People Leave School," The Journal of Educational Research, LIII (September, 1960), pp. 356-59.

²⁶Donald E. Kitch and William H. McCreary, "Now Hear Youth," The California Journal of Educational Research (November, 1961), pp. 269-78.

²⁷Martin, op. cit. p. 110.

III. IMPROVEMENT OF HOLDING POWER

The writer recognizes that schools have no control over some of the factors which contribute to early school leaving. Schools can, however, at least attempt to reduce school-induced practices which emphasize handicaps resulting from differences in intellectual ability, socio-economic and cultural background of students. Ziel²⁸ is of the opinion that schools must adapt to these differences. He summed his view up this way:

. . . Our society cannot assume that youngsters who will not become university students are incapable of rigorous attention to some sort of standards. One of the most appalling and unhappy errors that our society made in the past was to assume that youngsters incapable of the highest standards of intellectual performance were incapable of any standard whatsoever and could properly be subjected to shoddy, slovenly and trashy educational fare. The society which scorns excellence in plumbing because plumbing is a humble activity, which tolerates shoddiness in philosophy because it is an exalted activity will have neither good plumbing nor good philosophy. Neither its pipes nor its theories will hold water.

"For the most part, early school leavers are boys and girls in difficulty, dissatisfied unhappy, unsuccessful, alone. What can be done to help them?" In the light of these findings, Sando, quoted in Kitch and McCreary, outlines the following proposals:²⁹

1. Give greater attention to the task of understanding today's teenagers and their problems, their need for status and social acceptance with other boys and girls.

²⁸ Henry Ziel, "Educating Youth for an Expert Society," The Canadian Secondary School: An Appraisal and a Forecast (Toronto: The Bryant Press Ltd., 1963), p. 48.

²⁹ Kitch and McCreary, op. cit., p. 42.

2. Make school discipline more consistent. Early school leavers complained about inconsistency among the teachers, and about inconsistency in the same teachers from day to day.

3. Show the students that the faculty is sincerely interested in them as individuals.

4. Make the subject matter as real and meaningful as possible. Context of courses and methods may need to be changed.

5. Revamp the extracurricular activity program so that it will appeal to more students. They should be gauged to various social and cultural groups in school.

Similarly, a Canadian study³⁰ concluded that if the school is going to increase its holding power, one of the things it must do is make its curriculum more attractive to the students. It recommended the following:

1. That the school program be geared to meet the individual needs of the students, with particular emphasis placed on achievement rather than set grades.

2. That there be greater flexibility reflected in the formulation of policy regarding curriculum so that provision be made for differences of background, ability and interest of pupils.

3. That there be greater flexibility in the curriculum to allow for closer liason between the school and parents to interpret the school program and keep the parent informed of the student's progress.

Many early school leaving studies placed similar emphasis on the importance of the curriculum as a holding power factor. Martin³¹ put it this way:

The traditional aim of preparation for university should not be overstressed since only a small percentage of our pupils are either fitted for, or indeed want to pursue a university education. Consequently, an effort should be made to gain support, both within and without the school, for broader educational objectives; these objectives should be actively striven for in the

³⁰ Social Planning Council of Metropolitan Toronto, "A Report on School Drop-outs" (Toronto: 1961), pp. 15-16.

³¹ Martin, op. cit., p. 21.

classroom as well as adorn the pages of a Courses of Study manual.

Along the same line one report had this to say:

1. Diversify the program by providing experiences that meet the general and special education needs, interests, and abilities of all students.
2. Curriculum planning and teaching procedures should be based on the increasing quantity of research on how children learn.
3. Instruction materials must be adapted to the ability and maturity of students using them.
4. Teachers and administrators should be encouraged to be always alert to the necessity for curriculum modifications in terms of the changing needs of pupils and community.³²

To this list Hearn³³ added articulation: the need for students to plan a complete high school program instead of having year-to-year planning.

The writer has noted that school faculties are somewhat impatient with problem students. This impatience arises partly from the concern that such students interfere with the progress of other students. Unfortunately, an attitude of 'get them out of my subject' prevails on the part of teachers towards potential early school leavers which lessens the school's holding power. Lichter³⁴ feels that we must give students every opportunity to solve their problems, it is the school and not they that fail. Dreshner³⁵ recommended that a technique be devised to detect the potential early school leaver before he has 'mentally

³²Work Conference on Life Adjustment Education, "Why Do Boys and Girls Drop Out of School," (Chicago: 1950), pp. 41-43.

³³A. C. Hearn, "Increasing the School's Holding Power Through Articulation," Educational Administration and Supervision, XLII (April, 1956), pp. 216-18.

³⁴Lichter, op. cit., p. 268. ³⁵Dreshner, op. cit., p. 289.

dropped out', and that procedures and methods of dealing with these effectually must be planned. Another³⁶ stated that the relationship between teacher and pupil is of paramount importance. He added that a teacher's concern and interest, particularly in the suspected potential early school leaver, would in some cases prevent dropping out. Byrne stated that:

. . . Many drop-outs would have stayed had the school shown an interest in them, had there been interesting school studies, and perhaps, chiefly, had teachers shown care and concern for them.³⁷

In a project carried out in five Alberta high schools,³⁸ it was felt that perhaps the problem of lack of pupil-teacher report was due to over-specialization of the teaching staff. The report recommended that an attempt be made to limit the number of students a teacher would teach in any one day and consequently might be more effective in human relations by doing so. It was also recommended in the same report that ways should be sought to broaden the participation of teachers in extracurricular activities. The Gushaty³⁹ study recommended that longer periods of training and better methods of selecting teachers are needed before much can be done about solving the early school leaving problem.

³⁶ Martin, op. cit., p. 23.

³⁷ Richard H. Byrne, "Beware the Stay-in-School Bandwagon," Personnel and Guidance Journal, XXXVI (March, 1958), p. 494.

³⁸ H. L. Larson, "The Five School Project Drop-out Study," The Alberta Journal of Educational Research, VI (December, 1958), p. 214.

³⁹ Gushaty, op. cit., p. 108.

Another study⁴⁰ suggested that greater attention should be paid to personal suitability when admitting people to the teaching profession.

The role of guidance and counselling services for each school to assist the students to become oriented to the school, its activities, resources and regulations received considerable attention in a number of studies. The Cantoni study⁴¹ placed great emphasis on the importance of guidance. He stated that a comprehensive counselling program was one of the main factors in reducing the number of early school leavers in the Michigan school system. In a study by the New York Board of Education, the following statement appeared:

Does the provision of extensive guidance services reduce early school leaving in high school? The answer obtained in this study is that it definitely does, even though the difference between the rate of graduation in the experimental and comparison group is small and not statistically significant. The meaning of these findings seem to show that extensive work with teachers, revolving about the individual students, results not only in the improved education and adjustment of the particular student involved, but also of the other students in the classes of those teachers.⁴²

Finally, the authors of "Improvement of Holding Power"⁴³ state that reduced to its simplest form the improvement of the holding power of a given school simply means better education. The statement is

⁴⁰ Social Planning Council of Toronto, op. cit., p. 16.

⁴¹ Louis J. Cantoni, "Stay-ins Get Better Jobs," Personnel and Guidance Journal, XXXIII (May, 1955), p. 533.

⁴² Boston Guidance News, "Intensive Guidance Given Potential High School Drop-outs," Personnel and Guidance Journal, XXXV (May, 1957), p. 564.

⁴³ State Department of Education, "Improvement of Holding Power" (New York: The University of the State of New York, 1952), 56 pp.

fundamentally sound. If our high schools are to serve better the needs of our society and of those it now graduates, as well as the needs of those who now withdraw before graduation, the authors of this study feel that the following changes must take place:

1. There must be broad acceptance on the part of parents and teachers of the need for universal secondary education for all normal youth, and a formulation of a philosophy of education which accepts this thesis as fundamental to basic improvement.

2. The establishment of an adequate guidance program in all secondary schools must take place without delay. The varied interest and abilities of youth now attending high school make necessary a thorough study of each individual before the school can plan appropriate educational and vocational programs which will meet the need of the individual pupils.

3. The implications of universal education should be obvious to the teacher. Methods, techniques, materials and equipment must be adapted to the differences in individuals at both ends of the ability range. The pupil must also be accepted as a person and regarded as one possessing a normal yearning for achievement, recognition, security and new experience. There are needless barriers to complete adjustment in many of the practices existing in our schools today. By slavish adherence to tradition, we sacrifice the educational right and need of half of our youth.

4. If democratization of education is to be achieved then the inconsistencies between philosophy and practice must disappear. Diploma requirements, standards, marking systems, promotion policies, are all too often inconsistent with the school's professed policy of education thus forcing a pupil out of school.

IV. ABILITY AND THE EARLY SCHOOL LEAVER

It is pointless to state that early school leavers represent a group of students who have considerably less ability than those who graduate, and that therefore there is not much anybody can do about it. The results of studies make it clear that there is much overlap in the intellectual abilities between the early school leaver and those that

stay. Hohol⁴⁴ reports that the intelligence of the early school leaver is higher than most teachers suspect, and that the average early school leaver has the mental capacity to do the work required of the average high school student. The United States Department of Labor in a recent study⁴⁵ of twenty-two thousand school leavers, found that fifty-four per cent had average intelligence (90-110 I.Q.) or better. Youth who had an intelligence quotient below this level were twice as prone to early school leaving as students with higher intelligence quotients but at every level there was significant overlapping. In a study⁴⁶ involving grade ten classes in five centralized high schools in Alberta, Larson found that of students with an intelligence quotient of 115 or better, sixty-two per cent completed high school and gained a high school diploma or matriculation, while those students with an intelligence quotient of 115 or lower, nineteen per cent were successful in completing high school.

In his study, Livingstone⁴⁷ reported that the most significant factor was related to mental ability. The early school leaver was described as the student who has met with only limited success in the academic program of the school. The author pointed out, however, that even though mental ability was the most important single factor in the dropping out of the students he studied, it was not the sole factor.

⁴⁴Hohol, op. cit., p. 9.

⁴⁵Robert J. Havighurst, et al., Growing Up in River City (New York: John Wiley and Sons Inc., 1962).

⁴⁶Larson, op. cit., pp. 212-15. ⁴⁷Livingstone, op. cit., p. 200.

The Cook study⁴⁸ corroborated these findings. He reported that there was a ten-point difference in the intelligence quotient of the early school leaver compared to the graduates. A study done by Cantoni⁴⁹ also supported this evidence. He found that the mean intelligence quotient of the early school leaver he dealt with was 92.27 whereas those who continued in school and graduated had a mean intelligence quotient of 101.64.

Not all studies agree with these conclusions, however. The St. Christopher House research⁵⁰ done in Toronto quoted the Chicago Federation of Settlements and Neighborhood Centres in "On Breaking Through the Drop-out Problems" as saying:

More than two-thirds of these youngsters (early school leavers) according to National Association figures, have average or above average ability.

The Gushaty study⁵¹ done in southern Alberta also reported that "A large majority of the grade eleven and grade twelve drop-outs have the ability to graduate from our school system."

Rancier⁵² was of the opinion that low average intelligence should become a more important factor as the child moves up through the grades.

It would seem then that while low intelligence is one of the more important reasons for school maladjustment, it does not necessarily

⁴⁸Cook, op. cit., p. 194. ⁴⁹Cantoni, op. cit., p. 539.

⁵⁰St. Christopher House, op. cit., p. 8.

⁵¹Gushaty, op. cit., p. 17. ⁵²Rancier op. cit., p. 30.

follow that this is the only reason, nor even the most important reason in some cases, why students leave school. Knowledge of a student's intelligence alone will not enable prediction of school progress. However, it has predictive value when viewed with other factors. Havighurst⁵³ presented data on the relationship of intellectual capacity and social status to progress through school and shows that these two factors are strongly predictive of school success. Many of the studies reported high correlations between intelligence quotients and a number of other factors which appear to induce early school leaving.

In view of the possible relationship between ability and early school leaving, intellectual capacity, as measured by the grade nine quantitative scores, was used as a control variable in this research.

V. SOCIO-ECONOMIC FACTORS

The school exerts its influence upon the student during a small part of his total time. Fundamentally, his personality, attitudes and plans will be shaped to a large degree by his community life. Hart⁵⁴ lists many types of community experiences which educate students and he points out that the schools play some part in all these matters, but not as much as educators would like to believe. The struggle for the necessities of life, insecurity brought on by periodic unemployed status

⁵³ Havighurst, op. cit., p. 52.

⁵⁴ Joseph K. Hart, "How the Community Educates," Social Foundations of Education (New York: The Dryden Press Inc., 1962).

of parents, family life all too often punctuated with quarrelling, are the usual accompaniments of living within the social structure of the poor and provide little background against which to continue in school. Horowitz⁵⁵ suggests that the low financial status of the family is often characteristic of the early school leaving student. Hohol⁵⁶ stated however that a fatalistic view is not justified, even if the evidence strongly indicates a relationship between economic status and dropping out of school. He felt that under effective guidance, many students remain in school despite economic handicaps. There is no doubt that people who live in different ways will react to situations differently and think in different ways. Hollingshead⁵⁷ concluded that class V students appeared to be negatively oriented toward education and positively oriented toward work and pleasure. Further, that the social system is such that an isolating process operates in and out of school. The lower class student learned that to get money for things he wants he must work, so he leaves school as soon as possible, but in doing so he further restricts himself to his own group. Zeran⁵⁸ corroborated this evidence. He found that living in a home of low rental

⁵⁵ Lewis Horowitz, "Meeting the Drop-out Challenge," Viewpoints on Educational Issues and Problems (Philadelphia: University of Pennsylvania, 1952), p. 382.

⁵⁶ Hohol op. cit., p. 258.

⁵⁷ August B. Hollingshead, Elmtown's Youth (New York: John Wiley and Sons, Inc., 1949).

⁵⁸ Franklin R. Zeran, "Drop-out Cure: The Elementary Grades," Oregon Education (May, 1962).

value and living in a community or neighborhood area having a preponderance of low rental units, especially houses made over into apartments, was a common characteristic of early school leavers.

The occupational level of the father, and the low educational record of the parents were also factors identifying potential or actual school leavers. In addition, if a student lives in a community or neighborhood having a consistently high record of early school leavers he is more likely to drop out of school. Data gathered by Dresher⁵⁹ shows that the occupation of the parent is one of the most significant factors that lead to voluntary early school leaving. He further suggests that the managerial, clerical, professional and non-professional parents are the ones whose children are most likely to graduate from school.

Weiss⁶⁰ stated that the point at which a student leaves the educational escalator is crucial in determining his future occupational opportunities. The lower-class youth is less likely than the middle class youth to see the relevance of education for his occupational activity. Further, he added that where people end up in the occupational world turns out to depend, in a large measure, on where they begin.

The studies cited above showed that communities that have a high drop-out rate will have a negative influence on the in-school

⁵⁹Dresher, op. cit., p. 102.

⁶⁰Robert S. Weiss, "Social Problems and Disorganization in the World of Work," Contemporary Social Problems (New York: Harcourt, Brace and World, Inc., 1961).

students. Also, parents' lineage, wealth, status, and their class mobility did influence the students to leave school early. Students from lower income families were also more likely to be potential early school leavers. Therefore, socio-economic level of the parent, as a variable, was thought to be a worthwhile factor for analysis in this study.

Finally, the study conducted by Havighurst⁶¹ showed that the boys and girls who achieve well in school generally are those who have the advantage of families that help them and stimulate them to do good work. Further, that motivation for school achievement is necessary, and this comes about through the experience of a child with his family, neighbors, teachers and the world as he senses it directly and vicariously through books. It would then appear that school may be especially helpful to the minority, to give them the kind of experience that leads to good school achievement despite poverty in the home, or poor social adjustment.

VI. PREDICTIVE FACTORS STUDIES

Dillon,⁶² Gragg,⁶³ and Tripensee⁶⁴ attempted to determine which

⁶¹Havighurst et al., op. cit., p. 46.

⁶²Harold J. Dillon, "Early School Leavers, A Major Educational Problem" (New York: National Child Labor Committee, 1946).

⁶³William L. Gragg, "Some Factors Which Distinguish Drop-outs from High School Graduates," Occupation (April, 1949).

⁶⁴Tripensee, quoted by Hohol, op. cit., p. 9.

combination of factors notably prevalent in the cases of early school leaving studies had predictive value. The Nova Scotia guidance division⁶⁵ formulated identification factors as symptoms of early school leaving, as did Horowitz.⁶⁶ Snapp⁶⁷ also set up procedures for predicting early school leaving based on generally the same factors. It was hypothesized in the majority of studies reviewed by this writer that the school should be able to institute certain adjustments in its programs for those students of known vulnerability if it could be determined which factors primarily contributed to school withdrawal. The following ten items were involved in one form or another in their methods of prediction:

1. Grade nine scholarship.
2. Fairly consistent repression in scholarship from elementary to junior to senior high school.
3. Marked lack of interest in school work.
4. "Lack of belonging" in school.
5. Parent's occupational class.
6. Reading ability.
7. Socio-economic position.

⁶⁵ Department of Education, "The Potential Drop-out," Nova Scotia Guidance Newsletter, Bulletin 7:3 (February, 1953).

⁶⁶ Horowitz op. cit., pp. 382-95.

⁶⁷ Daniel W. Snapp, "Can We Salvage the Drop-out?" Clearing House, XI (September, 1956), pp. 49-54.

8. High frequency of subject failure in senior high school.
9. Regression in attendance.
10. Retardation, becoming over-age.

VII. ACHIEVEMENT FACTORS

In relating achievement records to the problem of the early school leaver, Horowitz⁶⁸ found that poor reading ability, subject failures, and lack of interest in or dislike of a certain subject identified the potential early leaver. Low achievement in reading as measured by a standardized reading test was a factor that Zeran⁶⁹ found to be associated with dropping out of school. Similarly, Stock⁷⁰ found that retardation and persistent low marks in English appeared to be the most significant cause of dropping out. Cervantes⁷¹ described the early school leaver as follows:

He was two years behind in reading at the seventh grade level. Majority of grades are below average. Failure in one or more school years. Performance consistently below potential.

Ede⁷² stated that failure on the part of the school to recognize individual differences contributes to the drop-out problem. The school is geared to the average achiever, or better than average child; the

⁶⁸Horowitz, op. cit., p. 382. ⁶⁹Zeran, op. cit., p. 2.

⁷⁰Francis J. Stock, "A Quick Method of Predicting Drop-outs," Personnel and Guidance Journal (January, 1954), p. 63.

⁷¹Lucius F. Cervantes, The Drop-out Causes and Cures (Ann Arbor: The University of Michigan Press, 1965), p. 198.

⁷²Ede, op. cit., p. 32.

school system frequently seems to lack provision for slow learners on one hand or the gifted children on the other. The effect on the gifted is more difficult to estimate, but nevertheless boredom does lead to maladjustment to school life and hence lower achievement. The effect on the slow learner is revealed in the number of children who are repeaters.

A major study by DiPasquale⁷³ discusses the school and its relationship to school drop-outs. He states:

Grade failure was conceived originally to give the child a second chance to learn the essentials prerequisite to the next grade. However it does not always work. Often the low achiever does no better the second year than he did the year before. Research shows that he might have done as well, if not better, had he been permitted to go into the next grade.

When a child repeats a grade, he begins to dislike school, if he does not already dislike it. When he fails twice, he does not want to go to school. When he fails three times, he is almost certain to be a drop-out.

The fact that non-promotion does not solve, but simply aggravates the problems for the under-achiever is well illustrated in the summary of research on promotions by Worth.⁷⁴ Worth's typical repeated student is described as follows:

He is likely to be a boy, of somewhat less than average ability, with apparently little interest in school work, whose level of performance in various aspects of the school's program

⁷³Vincent C. DiPasquale, "The Relation Between Drop-outs and the Graded School," Phi Delta Kappa, XLVI, No. 3 (November, 1964), p. 9.

⁷⁴Walter H. Worth, "What Research Says About Promotions," Canadian Education, 15:4 (September, 1960), p. 63.

is consistently below that which is normally expected of children of his grade. He probably comes from a relatively low socio-economic group, is absent from school a great deal, and has experienced non-promotion before. Moreover, he may simply have been "unlucky" in his choice of school and teacher.

VIII. SUMMARY OF CHAPTER 2

This chapter reviewed literature on the early school leaving problem to obtain evidence that would help in identifying major associated and predictive factors which lead to high school withdrawal.

Generally, the studies showed that reading ability, retardation, socio-economic status, parents' occupational class, achievement levels, intellectual capacity and lack of appropriate program were all factors that might be useful in studying the early school leaving problem in the High Prairie School Division. It was noted specifically that lower than average intellectual capacity alone does not force students to leave school. For this reason, in this study the Grade IX scholastic ability scores were used to match the groups.

Chapter 3

ORGANIZATION OF THE HIGH PRAIRIE

SCHOOL DIVISION NO. 48

It is the purpose of this chapter to provide a description of the High Prairie School Division No. 48 in terms of its location, its layout and development as it stood in the summer of 1971. From this description an attempt is made to visualize the probable impact of the Division's geography, ecology and history, on the students, particularly with reference to the early school leaver.

I. LOCATION AND SIZE

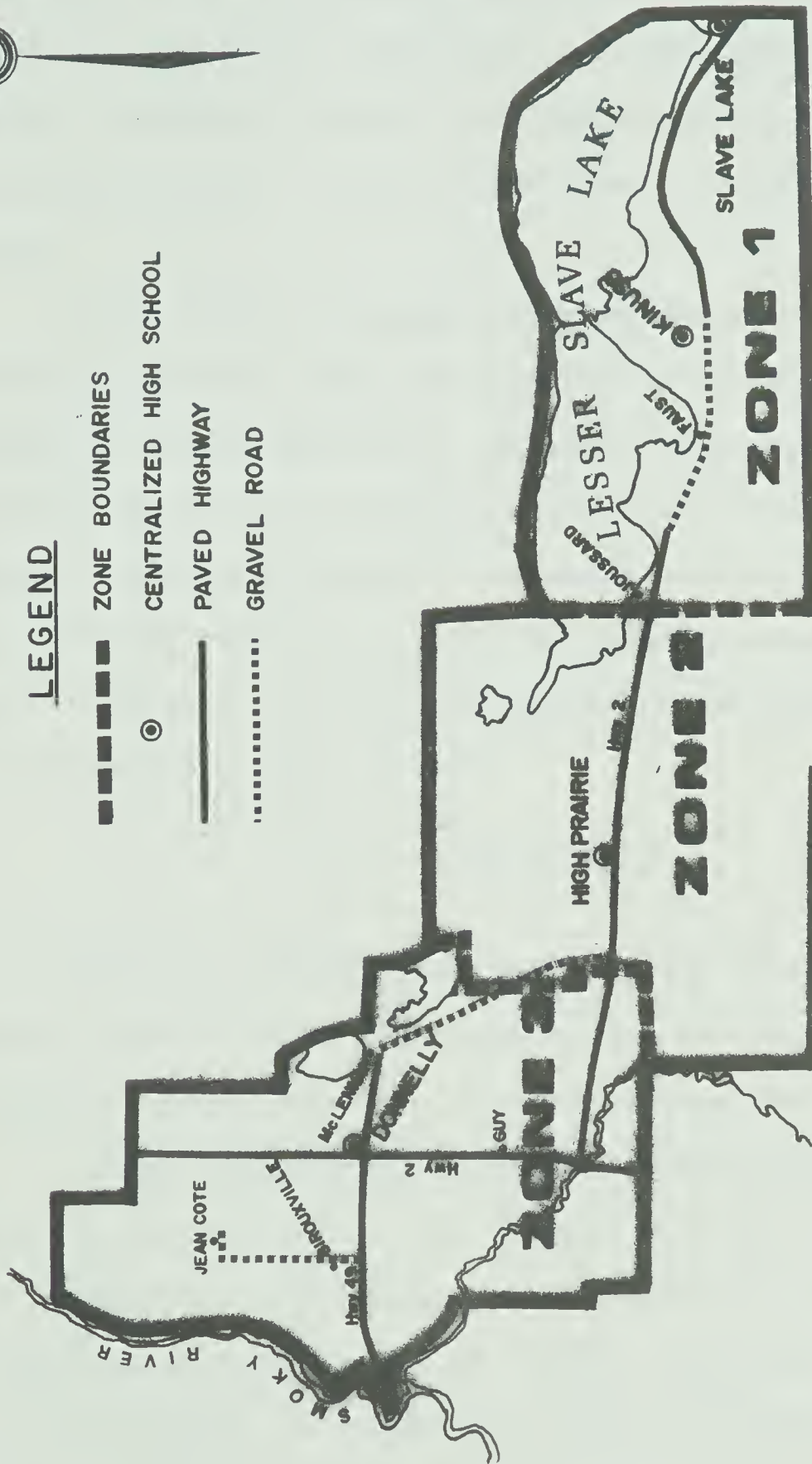
The High Prairie School Division No. 48 is an administrative authority operating fourteen schools in a geographic area situated one hundred fifty miles northeast of Edmonton. Included are schools in the towns of Slave Lake, High Prairie and McLennan, the villages of Girouxville, Donnelly and Kinuso, and the hamlets of Jean Cote, Guy, Joussard, Faust and Canyon Creek. The administrative office is located in High Prairie, seventy-five miles from the farthest school to the east, and fifty-three miles from the farthest school to the west.

There exist within the boundaries of the School Division three other school authorities. In High Prairie, a Separate School Board operates one school offering instruction to Grade IX. Their high school students attend the Divisional High School at High Prairie. Similarly,



LEGEND

- ■ ■ ■ ■ ZONE BOUNDARIES
- ⊙ CENTRALIZED HIGH SCHOOL
- PAVED HIGHWAY
- GRAVEL ROAD



1971 MAP HIGH PRAIRIE SCHOOL DIV.

Figure 1

at McLennan, a Separate School Board operates one school offering instruction to Grade IX. Their high school students are centralized at Donnelly. At Falher, there is a consolidated school district which is controlled by a board. Its only school offers instruction in Grades I to XII.

In 1970, tuition agreements with the County of Athabasca No. 12 and the Spirit River School Division No. 47 had the effect of extending the attendance areas of the Slave Lake and Donnelly centralized high schools to include the hamlets of Smith and Tangent, located at the eastern and western extremities of the High Prairie School Division, respectively. The road distance between Smith and Tangent is 201 miles, which is illustrative of the geographic extent of the High Prairie School Division.

II. COMMUNICATIONS

Highway No. 2 provides all-weather access in an east and west direction from the town of High Prairie. The west portion is hard surfaced and provides access to schools in a north-south direction as well. The area is serviced by the Northern Alberta Railway which connects all but two centres, Jean Côté and Guy, and is the eastern outlet to Edmonton. This service is not used to any extent by passengers, but is primarily utilized for freight. Passenger coach service to and from Edmonton is provided twice daily by Canadian Coachways. Communication services provide a dial telephone system and direct dialing service. Two television channels are available to all residents except those residing east of High Prairie, where one channel (CBXT) is

available. Both channels are aired through satellite transmitters located at High Prairie and Grande Prairie and serviced from the main studios in Edmonton. AM radio services are available from two major radio stations located at Grande Prairie and Peace River. Radio reception from Edmonton is sporadic. Of importance in the communication media are weekly newspapers: The Oiler, serving the lake area, The South Peace News, located at High Prairie, and the Peace River Record Gazette, serving the western zone. The weekly newspapers cater to local news and views, and the promotion of events within their respective areas. Postal services are available to the area on a daily basis from Edmonton.

III. ADMINISTRATIVE ORGANIZATION

The High Prairie School Division No. 48 is governed by a five-man school board which meets once a month. Each trustee represents a sub-division. The Divisional Handbook¹ defines the role of the Board, its Chairman and Administrative Officers as follows:

BOARD

The Board shall be the final authority in all matters relating to the management of the affairs of the Division with a view to providing the best possible educational opportunities and physical facilities for the students that are their responsibility, having due concern for reasonable demands on staff and ratepayers.

CHAIRMAN

The Chairman as the senior elected officer of the Board shall

¹High Prairie School Division No. 48, The Divisional Handbook, p. 300-01.

exercise general supervision over the affairs of the Division, shall be ex-officio a member of all committees, and shall have power to deal with matters of an emergent nature subject to reporting same to the next regular or special meeting of the Board.

SUPERINTENDENT

The superintendent shall be an executive officer of the Board responsible for the direction and supervision of the instructional staff and the educational program of the Division according to policies, resolutions and directions of the Board.

Without restricting the generality of the foregoing the Superintendent shall:

1. Report on present educational programs and how well they are meeting our short and long term objectives.
2. Make recommendations on how the educational program might be improved.
3. Visit the schools regularly to observe and inspect the quality of instruction, general discipline, organization, and use of equipment.
4. Inspect or cause to be inspected all physical facilities and grounds with special reference to cleanliness, maintenance and general suitability.
5. Make recommendations to the Board with respect to school accommodation.
6. Inform the Board of projected building needs.
7. Determine staff requirements.
8. Carry out a recruiting program to meet staff requirements.
9. Recommend to the Board the appointment and assignment of personnel.
10. Report to the Board any teacher whose services are considered unsatisfactory.
11. Arrange for the services of substitute teachers as required.
12. Have authority to require members of the teaching staff to attend regular or special meetings for discussion or instruction.
13. Prepare all reports required by the Board.
14. Attend all meetings of the Board unless otherwise directed.
15. Perform such other duties as may be required by the Board.

SECRETARY-TREASURER

The Secretary-Treasurer shall be an executive officer of the Board responsible for the financial affairs of the Division and the supervision of office staff and procedures according to policies, resolutions and directions of the Board.

Without restricting the generality of the foregoing the

Secretary-Treasurer shall:

1. Prepare, or cause to be prepared, suitable records of all Board and committee meetings.
2. Prepare, or cause to be prepared, all necessary records on the financial transactions of the Division.
3. Prepare, or cause to be prepared, all necessary payrolls.
4. Prepare an annual budget.
5. Report regularly to the Board on the financial position of the Division.
6. Examine regularly the expenditures of all departments.
7. Approve all accounts before payment.
8. Prepare and effect all necessary By-Laws.
9. Perform such other duties as may be required by the Board.

ASSOCIATE OR ASSISTANT SUPERINTENDENT

Shall be under the direction, and report to the Superintendent. He/they may from time to time be assigned specific duties by the Board, and be required to report on them.

SUPERINTENDENT OF BUILDING AND MAINTENANCE

Shall consult regularly with the Superintendent and the Secretary-Treasurer on the needs and budget of his Department and shall be responsible within the policies established by the Board for the maintenance of grounds, buildings, and plant facilities at the highest level possible within the limitations set by the budget. He may be required to report directly to the Board.

SUPERINTENDENT OF TRANSPORTATION

Shall consult regularly with the Superintendent and Secretary-Treasurer on the needs and budget of his Department and shall be responsible within the policies established by the Board for maintaining the highest standard of pupil transportation possible within the limitations set by the budget. He may be required to report directly to the Board.

A provincially-appointed superintendent represented the Department of Education in this area until December 31, 1970. Changes in the School Act made it mandatory for systems of this size to appoint their own school superintendents. The writer, on the scene as a provincially-appointed superintendent, resigned from the government service to accept this local appointment.

A definition of the principals' role has been written into Board

policy² which states:

The Principal, with the aid of his assistant, is the administrative and supervisory head of the school, responsible to the Board through the Superintendent of Schools, and the duties, implied or expressed, associated with the appointment include all matters which will facilitate and promote the all round development of pupils in the school.

IV. GEOGRAPHIC ZONES

The High Prairie School Division No. 48 represents an amalgamation of three educational systems. Historically, the Slave Lake School Division No. 53, formed January 2, 1945, encompassed an area presently referred to as the Lesser Slave Lake Region. The McLennan School Division No. 8, formed April 1, 1946, served the area from McLennan west which is now commonly referred to as the West End region of the High Prairie School Division No. 48. The High Prairie area was originally organized as a local district. In 1946, the McLennan School Division boundaries were extended to include the High Prairie district schools. On August 12, 1946 the two school divisions, namely, McLennan and Slave Lake, amalgamated. The central administrative offices were relocated in High Prairie, and the Division named High Prairie School Division No. 48.

Sociologically and geographically speaking, the three regions, namely the West End, Central and Lesser Slave Lake, are sufficiently large and different to warrant distinctive description. For purposes of this study, each region shall be identified in terms of zones as

²Ibid., p. 12.

Lesser Slave Lake region	-	Zone 1
Central region	-	Zone 2
West End region	-	Zone 3

Demography of Zones

Zone 1. The Lesser Slave Lake region extends fifty miles east-west along the southern shore of the Lesser Slave Lake. As illustrated in Figure 1, page 36, the zone is co-terminus with the Improvement District No. 124. Its population is dispersed along a narrow ribbon north and south of Highway No. 2 with the exception of Kinuso where the north-south limits extend approximately eight miles. The zone is the location of perhaps the largest single concentration of people of mixed white and Indian blood in Alberta.³ The Lesser Slave Lake area is in a state of transition. At one time the forest harvest provided part-time employment for a large proportion of the people. Commercial fishing was carried on extensively when the supply of whitefish was much greater than it is now; mink farmers had relatively easy access to cheap food and the prices of the mink pelts were higher; the necessities of life were obtained from the resources of the local area to a greater degree than is possible at the time of this writing. To summarize, the lumbering, fishing, agricultural and trapping industries have shown a steady declining level of output. On the other hand, developments related to the oil industry in the Mitsue field near the town of Slave

³B. Y. Card, quoted in J. W. Chalmers, Intercultural Education Survey (Edmonton: University of Alberta), November, 1970.

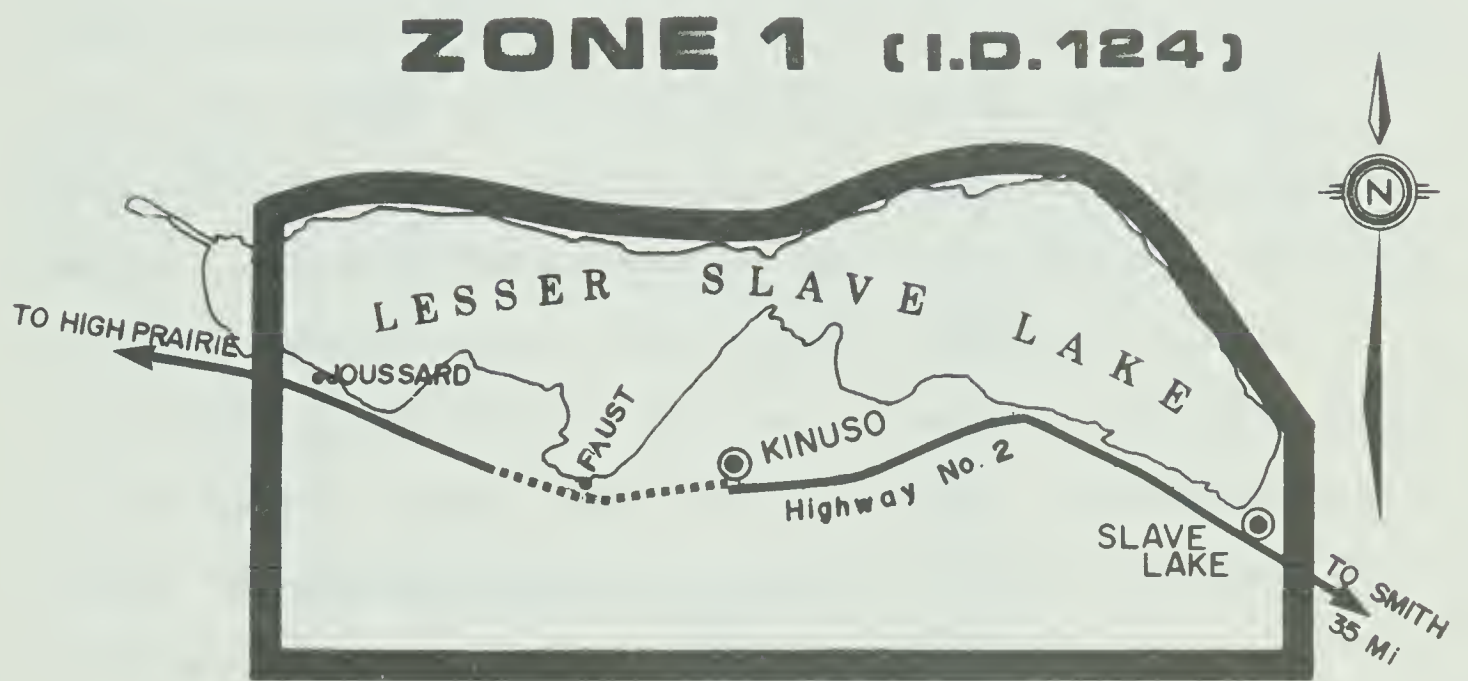


Figure 2

Lake resulted in the 400 per cent increase in population in this town during the period 1962-1969.⁴ There has also been a substantial increase in government payrolls with the town of Slave Lake being the location of government offices for the zone.

Zone 2. The Central region extends east-west from Joussard to the boundary of the Municipal District of Smoky River, a distance of thirty miles and forty-five miles north-south. The zone is co-terminus with Improvement District No. 125. The Town of High Prairie is the dominant population center accounting for more than forty-five per cent of the total population of 5,531 persons. The only Metis colony located within the Divisional boundaries is situated in the region twenty-five miles to the south of the Town of High Prairie. The region is a mixed farming district, with forestry, sawmills and lumber contributing substantially to the local economy. The population falls into four ethnic groups: Scandinavian, Ukrainian, Anglo-Saxon and Native. The dominant group is of Anglo-Saxon origin, representing forty-two per cent of the population in 1961.⁵

Zone 3. The zone extends forty miles north-south from Jean Cote to Guy and thirty-two miles east-west from McLennan to the banks of the Big Smoky River. The zone is co-terminus with the Municipal District

⁴Rural Development Branch, Department of Agriculture, An Analysis of Resources, Lesser Slave Lake Area (Edmonton, Alberta, May, 1969).

⁵Dominion Bureau of Statistics, 1961 Census of Canada, Population--Ethnic Groups (Ottawa: Queen's Printer, 1962). (Adapted.)

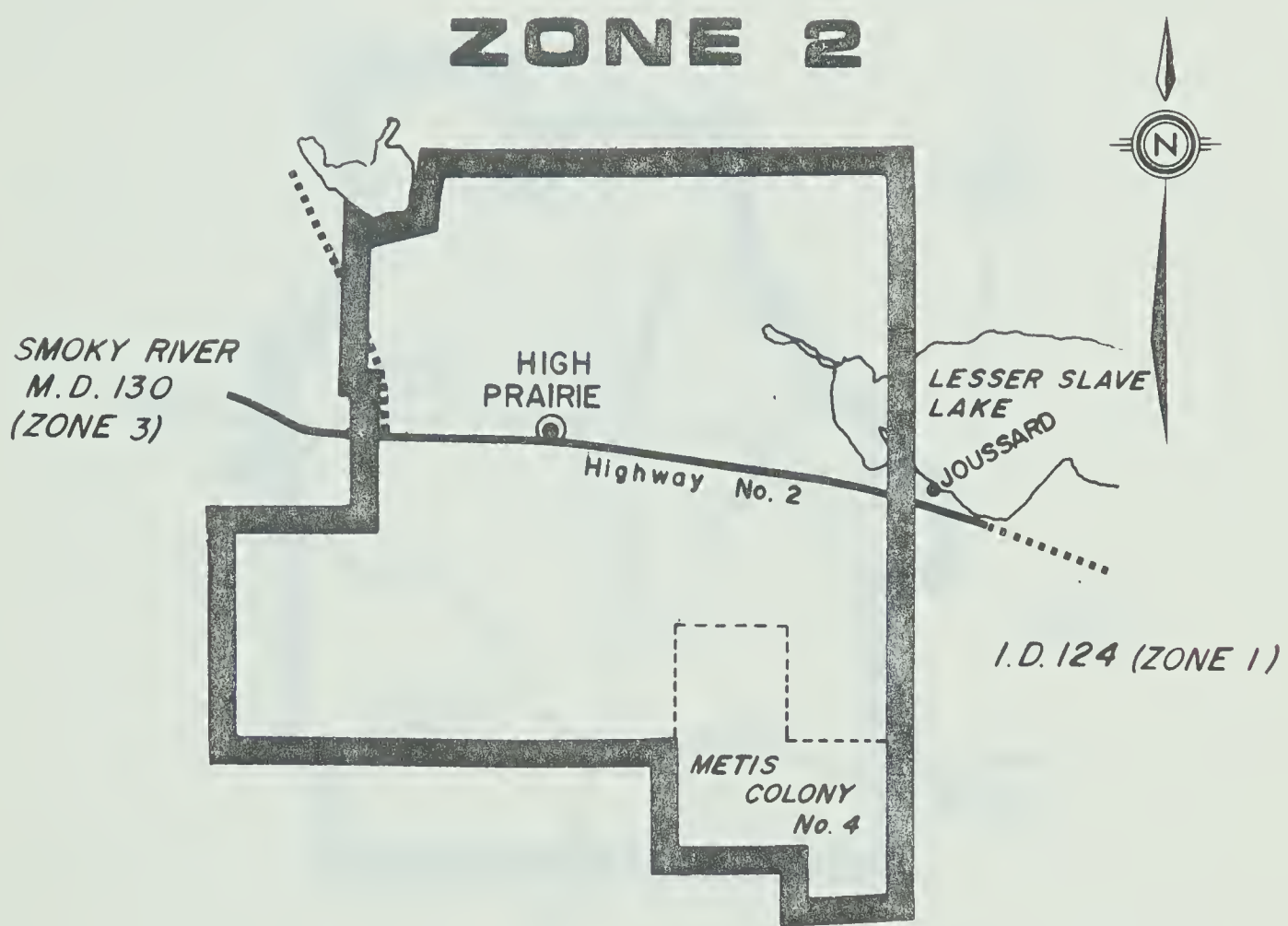


Figure 3

ZONE 3 (M.D.OF SMOKY)

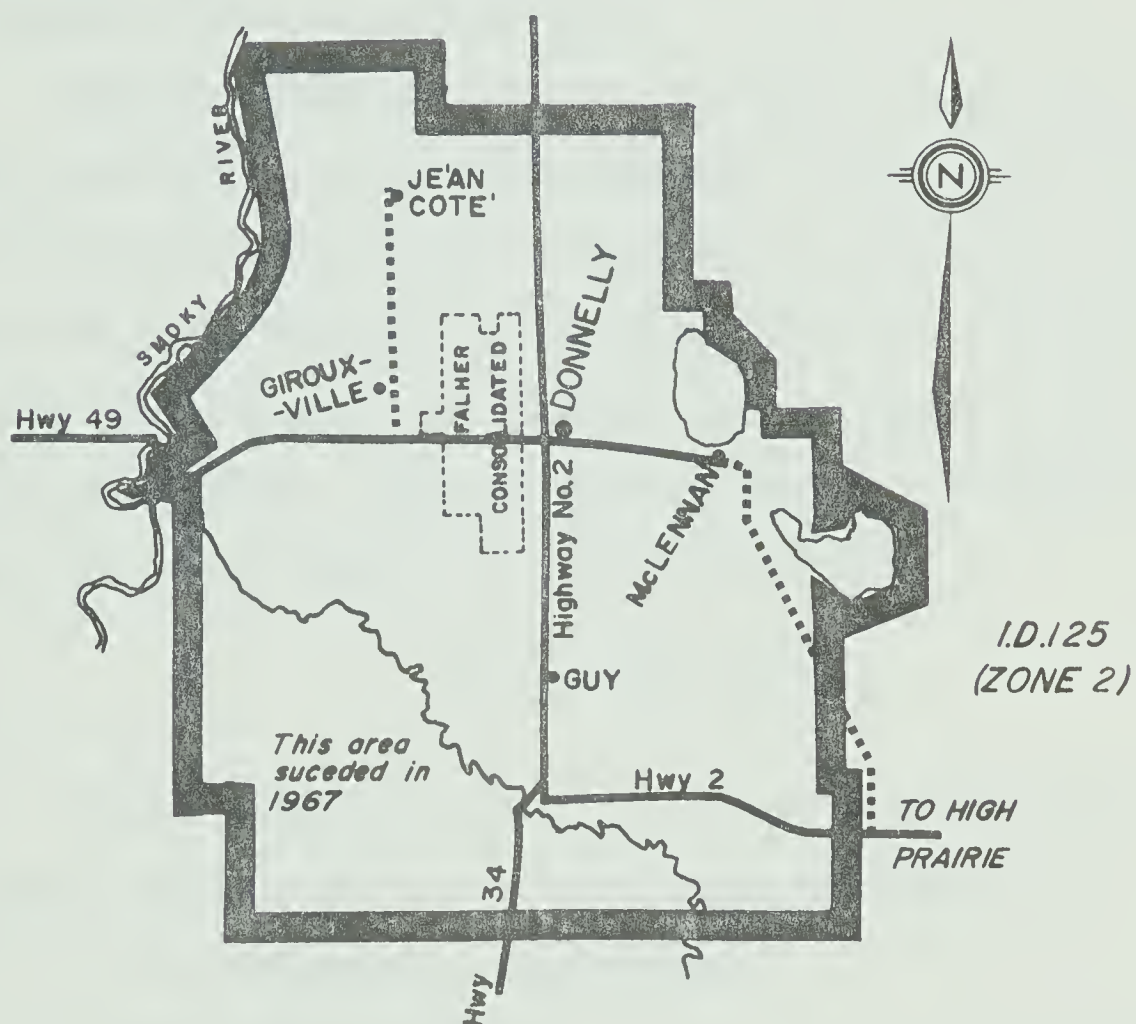


Figure 4.

of Smoky River. Its population is 7,700⁶ of which about seventy-five per cent are of French-Canadian origin. The economy of the zone is based nearly exclusively on agriculture. McLennan (pop. 1,200) is a railway center. Falher (pop. 800) is the site of the Municipal District Administrative Office, while Girouxville (pop. 450) is the site of the farm co-operative businesses, and Donnelly (pop. 340) is the site of the Division's Centralized High School.

Because the economic base of the region is agriculture, it suffers from certain fluctuations according to farm product markets. There exists potential for the establishment of stabilizing industries which would not only diversify the economic base, but provide employment for young people without them having to live on farms or move to the nearest urban center. There are very few secondary industries in the region, even those closely connected with agriculture.

V. SOCIO-ECONOMIC PROFILE

In this section an examination is made of the Division's three geographic zones. Each zone is considered with respect to:

1. Its population characteristics.
2. The level of wealth.
3. The educational level of its residents.

The year 1966 was chosen as the major time focus, as it was the year in which the most recent Dominion Bureau of Statistics data were

⁶Population figures from the M.D. of Smoky River Annual Report (April, 1970).

available. However, important developments after 1966 reflected by population and property assessment data are taken into consideration and noted.

Population Characteristics

Ethnicity. The study area population falls into three major ethnic groupings:

1. Anglo-Saxon
2. Native
3. French-Canadian

The Anglo-Saxon population is dispersed throughout the Division with concentrations occurring in the High Prairie area, Slave Lake, Kinuso and McLennan. The Native population is dispersed primarily east of the High Prairie area. Four Indian reservations are established; they are Sucker Creek, Driftpile, Swan River and Sawridge. The French-Canadian population is concentrated in the western area of the Division and at Joussard.

The term "ethnic," which includes notions of racial or physical differences and of nationality or cultural differences, is used within a narrow range of meaning when describing population groupings in the three zones of the Division. In assigning ethnic status, the criterion used was the household language for communication or mother tongue. The term has local application to three main categories of people. First, a grouping composed of less distinguishable groups in terms of the broader definition of ethnicity, are the Anglo-Saxons. Grouped in this category are first and second generation European nationals whose customs

and accents at one time tended to differentiate them from other local people of British, Scandanavian and Asiatic ancentry. Second are the Metis and Indians referred to locally as Natives whose home language is Cree. In terms of their numbers and distinctive influence on the area's social organization, they are by far the most significant of the Zone 1 ethnic groups. Finally, are persons of French-Canadian ancestry, a majority of whom still speak French. In terms of numbers and distinctive contribution to Zone 3's culture and social organization they are by far the most significant group. Tables 1, 2 and 3 show the population characteristics by subdivisions and serve to identify the dominant ethnic grouping in each zone.

The 1970 student enrolments in schools in each of the three zones reflected a similar ethnic pattern. This is indicated in Tables 4, 5 and 6.

Trends and Age Group Distribution

The population within the boundaries of the High Prairie School Division No. 48 increased from 16,375 persons in 1961 to 17,864 persons in 1970. It is indicated in Table 7 that most of the growth occurred in the two major towns of Slave Lake and High Prairie while many of the rural areas actually lost population.

The significant increase in population occurred between 1961 and 1966. It could be expected that the increase could come from two sources. The one source is from the relatively high birth rate, coupled with the lack of out-migration and the second source is the in-migration of people in the labor force to fill jobs for which people residing in

Table 1

Population Characteristics of Zone 1 Residents^a

	1966	Native	All Others	Per Cent Native
Improvement District 124	2,732	1,280	1,452	46.8%
Slave Lake	1,716	490	1,226	28.5
Kinuso	376	95	281	25.2
Indian Reserves	1,410	1,410	-	100.0
Totals	6,234	3,275	2,959	51.5

^a J. W. Chalmers, Intercultural Education Survey, conducted November, 1970 (Edmonton: University of Alberta) p. 8.

Table 2

Population Characteristics of Zone 2 Residents^a

	1966	Anglo-Saxon	All Others	Per Cent Anglo-Saxon
Improvement District 125	3,101	1,965	1,136	63.4%
High Prairie	2,214	1,246	968	59.1
Totals	5,315	3,211	2,104	61.2

^a Town of High Prairie, Recreation Services Study (Edmonton, Alberta: Contact Resource Consultants), February, 1971.

Table 3

Population Characteristics of Zone 3 Residents^a

	1966	French-Canadian	All Others	Per Cent French-Cdn.
M.D. Smoky River	4,250	3,609	641	84.9%
Girouxville	310	280	30	90.4
Donnelly	275	268	7	92.6
McLennan	1,250	526	724	42.1
Totals	6,085	4,683	1,402	77.5

^a Daniel Creurer, Project d'Animation Sociale en Education dans la Riviere-la-Paix (Edmonton: Service Animation Sociale), May, 1971.

Table 4
Mother Tongue of Students Enrolled in Schools in
Zone 1 on September 30, 1970^a

	Total	Cree	All Others	Per Cent Cree Speaking
Slave Lake Schools	813	216	597	26.5%
Canyon Creek	30	18	12	60.0
Kinuso	320	90	230	28.1
Faust	234	165	69	70.5
Joussard	120	55	65	45.8
Driftpile	28	28	-	100.0
Sucker Creek	14	14	-	100.0
Totals	1,559	586	973	37.9

^aJ. W. Chalmers, Intercultural Education Survey, conducted November, 1970 (Edmonton: University of Alberta), p. 3.

Table 5
Mother Tongue of Students Enrolled in Schools in
Zone 2 on September 30, 1970^a

	Total	English	All Others	Per Cent English Speaking
High Prairie Division Schools	1,076	794	282	73.8%
High Prairie Separate Schools	460	311	149	67.6
Totals	1,536	1,105	431	71.9

^aSurvey conducted by Superintendent of Schools, High Prairie School Division No. 48, October, 1970.

Table 6

Mother Tongue of Students Enrolled in Schools in
Zone 3 on September 30, 1970^a

	Total	French	All Others	Per Cent French Speaking
Jean Cote	86	86	-	100.0%
Guy	159	127	32	79.8
Girouxville	343	302	41	88.0
Donnelly	526	462	64	87.8
McLennan	305	110	195	30.6
Totals	1,419	1,087	332	76.7

^aSurvey conducted by Superintendent of Schools, High Prairie School Division No. 48, October, 1970.

Table 7

Population by Zones in School Division
from 1961-1970^a

	1961	1966	1970
<u>ZONE 1</u>			
Improvement District 124	3,108	2,732	2,840
Kinuso	323	376	376
Slave Lake	468	1,716	1,916
Indian Reserves	1,453	1,410	1,560
Sub-totals	5,352	6,234	6,692
<u>ZONE 2</u>			
Improvement District 125	3,212	3,101	3,009
High Prairie	1,756	2,214	2,430
Sub-totals	4,968	5,315	5,439
<u>ZONE 3</u>			
M.D. Smoky	4,310	4,250	3,984
Donnelly	245	275	287
McLennan	1,190	1,250	1,157
Girouxville	310	310	305
Sub-totals	6,055	6,085	5,733
Totals	16,375	17,634	17,864

^aDominion Bureau of Statistics, 1961 Census of Canada, Bulletin I. 1-10; 1966 Bulletin I (1-6) and the Alberta Municipal Counsellor (April-May, 1971).

the area did not have the necessary skills.

Table 8 shows the population of Zone 1 by selected age groupings and allows comparisons to be made with Zone 2, Zone 3 and Alberta. The under-five age group is used to measure the fertility ratio of a population. The fertility ratio is the number of children under five per 1,000 women 15-45 years of age. The fertility ratio for Zone 1 in 1966 was 888 per 1,000 women of childbearing age compared to 742 for Zone 2, 590 for Zone 3 and 581 for Alberta.⁷ The ratio in the four Indian Reserves located in Zone 1 was 1,095 per 1,000 women.

The age group 5-24 years is the group that should contribute most to school attendance. Most of the people attending school in the Division will be under twenty years of age because there are no facilities for post-high school training. Relative to the total population there are more people in the school attending age category in each of the three zones than is usual for the Province of Alberta.

The age group 20-34 years is the time when people are generally most mobile. People in this category are leaving home for post-secondary education and to find work. This is also the group that is beginning to establish new families. In an area of high out-migration it could be expected that there would be relatively few people in this age category. In Zone 3, 14.5 per cent of the total population was between 20 and 34 years and in Alberta, 13.3 per cent of the population is in this category. However, in Zones 1 and 2 a much higher proportion of

⁷Rural Development Branch, op. cit., p. 18, adapted.

Table 8
Population by Selected Age Groups
Zones 1, 2, 3 and Alberta

Age Group	Percentage			Alberta
	Zone 1	Zone 2	Zone 3	
Under 5 years	17.7%	18.3%	11.6%	11.9%
5 - 24	43.4	42.9	39.4	38.9
20 - 34	21.2	22.6	14.5	13.3
35 - 64	51.9	53.2	54.2	57.9
65+	4.6	4.5	5.6	7.1

^aAtlas of Alberta (1966), p. 54.

the total population is in this category. There are two towns in this area which have grown rapidly in the 1961-1966 period and this could account for the large proportion in Zones 1 and 2. The out-migration from farms precipitated by the breakdown of the family farm unit could account for the relatively lower proportion of the population in this category in Zone 3.

Level of Wealth

Areas with high per capita incomes usually have a high proportion of the population in the labor force and a low proportion in the dependent age groups.⁸ The age 15-64 age group is usually considered the age group in the work force.

As indicated in Table 8, in Alberta 57.9 per cent of the total population is in this category while average percentage for the Division is 53.1. There are fewer in Zone 1 (51.9 per cent) and Zone 2 (53.2 per cent) than in Zone 3 (54.2 per cent).

The relatively low proportion in the productive age group (15-64 years) and the relatively high proportion of the population in the non-productive age groups (under 15 and over 64 years) means that there are fewer people to bring income to the area, relatively fewer people to pay taxes and relatively more people to support from existing income and taxes. It follows that the per capita income will be lower and the taxes per ratepayer relatively higher in Zone 1 than in Zones 2 and 3.

⁸ Bernard R. Blishen, et al., Canadian Society Sociological Perspectives (Toronto: The Macmillan Company of Canada Ltd., 1961), p. 478.

Zone 3 would have a higher per capita income than either of the Zones 1 or 2, but slightly lower than the provincial average.

The per capita real estate property assessment ratio of an area can be considered an accurate index of wealth.⁹ The three zones in this study show marked variations in the assessment base per capita; they are also, in each case, below the average assessment per capita in Alberta (Table 9).

The level of wealth of different parts of the nation may be classified according to whether they are donor, neutral or recipient areas in relation to government wealth.¹⁰ Pioneer areas are frequently recipient areas, as are areas with high concentrations of Native Canadians generally. The High Prairie School Division No. 48 has both qualifications. According to a recent survey,¹¹ the area's net gain from government sources was of the order of three-quarter million dollars in 1969. Of the funds coming into the area from provincial sources, 82.5 per cent are in the form of funds for salaries or expenses of individuals and social assistance. Similarly, federal monies coming in are in large part in the form of salaries, unemployment insurance benefits, family allowance and old age pensions, all of which

⁹Paul R. Mort, Walter C. Reusser and John W. Palley, Public School Finance (New York: McGraw-Hill Book Co. Inc., 1960), p. 130.

¹⁰B. Y. Card, A Case Study, Alberta Improvement District (Edmonton: University of Alberta, 1960).

¹¹Government of Alberta, Human Resources Development Authority, A Socio-Economic Survey of Isolated Communities in Northern Alberta (Edmonton: Queen's Printer, July, 1970).

Table 9
Selected Aspects of Taxation--1970^a

	Assessment ^b \$000	Population	Assessment per Capita \$	Alberta Average \$
Zone 1	\$ 4,764	5,132	\$ 928	\$ 1,920
Zone 2	6,490	5,440	1,190	1,920
Zone 3	7,639	5,733	1,332	1,920

^aDepartment of Municipal Affairs, The Alberta Municipal Counsellor, 15:3 (April, 1970), pp. 5-7.

^bIndian reserves excluded.

Table 10

School Foundation Plan Grants Paid to School Authorities
Compared to Requisitions Paid into Provincial
Fund by Collecting Authorities 1970^a

IN Grants Received From Province	OUT Paid by Collecting Authorities	Net In
\$ 2,793,734.69	\$ 383,663.39	\$ 2,410,071.60

^aHigh Prairie School Division No. 48, Audited Financial Statement (December, 1970).

Table 11

Social Assistance Paid to Persons in Region by the
Provincial Government During a One-Year
Period--1970^a

	In	Out	Net In
Short-term Assistance	\$ 228,552	Nil	\$ 228,552
Long-term Assistance	517,992	Nil	517,992
Supplementary Pensions	105,048	Nil	105,048
Paid to Municipalities for short term assistance cost	149,999	\$ 662 ^b	149,337
Total			\$1,000,929

^aGovernment of Alberta, Department of Social Development, Records, special tabulation.

^bOld age home payment to government.

Table 12

Social Allowance Number of Cases and Rates of Occurrence
 High Prairie School Division Region and Alberta
 July, 1967^a

Area	Population	Percent of Total Alberta Population	No. of Cases	Percent of Total Alberta Cases	Population per Case
High Prairie School Div. Region	16,620 ^b	1.2%	338	2.2%	52.1
Alberta	1,443,014	100.0	15,237	100.0	75.6

^aGovernment of Alberta, Department of Social Development,
 Regional Office, High Prairie Alberta. Special tabulation.

^bExcludes Indian Reserves, population data from 1966 Canada
 Census.

almost double the provincial average.

A breakdown of figures on social assistance recipients for particular zones within the region was unobtainable. In view of this limitation, no conclusions were reached regarding difference in level of wealth between zones, using the incidence of social assistance index.

In summary, without exhausting the conclusions or inferences which could be drawn from the data, it appears most pertinent to the study to conclude that the socio-economic well-being of the residents of the region is on the average below that enjoyed by Albertans generally and further that three distinct levels of wealth can be identified within the region with Zones 1 and 3 being at the lowest and highest respectively.

Educational Level of Residents of Area

In 1961, 64.6 per cent of the people in the region had only an elementary education or less compared with 47.0 per cent for all of Alberta. Table 13 shows the population of five years and over not attending school and allows for comparisons to be made between zones of the region and Alberta.

It is evident that education levels are lower in Zones 1 and 2 than in Zone 3 and collectively have fewer persons who completed high school than the average for Alberta, with 6.6 per cent of High Prairie School Division's population having completed high school compared to 12 per cent for the population of the Province of Alberta.

People from this area would probably find it difficult to compete with the people from other areas for skilled jobs because of

Table 13
 Population Five Years of Age and Over Not Attending
 School by Highest Grade Attended^a
 1961

	Percentage			
	Zone 1	Zone 2	Zone 3	Alberta
No school	14.7%	13.4%	10.8%	7.0%
Elementary 1-4 years	13.8	13.3	11.2	5.4
Elementary 5+ years	36.0	35.0	34.1	30.5
High school 1-2 years	17.6	18.4	20.3	22.9
High school 3-4 years	11.7	14.2	16.7	22.2
High school 5 years	2.8	2.3	2.8	5.2
University 1-2 years	2.2	2.1	2.6	3.0
University 3-4 years	0.5	0.5	0.6	0.9
University degree	0.7	0.8	0.9	2.9
	100.0	100.0	100.0	100.0

^aRural Development Branch, Department of Agriculture, An Analysis of Resources, Lesser Slave Lake Area (Edmonton, Alberta, May, 1969), p. 27.

lack of education. This could perhaps account for the relatively low out-migration in Zones 1 and 2 alluded to earlier.¹³

There is only a slightly lower proportion of the population attending school in the High Prairie School Division than in Alberta. According to a recent study¹⁴ there were 64.4 per cent of the people between five and twenty-four years who were attending school compared with 65.1 per cent for Alberta.

VI. FACILITIES FOR EDUCATION AND STUDENT POPULATION

Since its formation in 1946 the High Prairie School Division No. 48 has experienced a steady growth in student population and a decrease in the number of operating schools. At that time the Division operated forty-eight schools to serve a student population of 950. In 1970, fourteen schools were operating with a student enrollment of 3,798.

School Facilities

In 1971, fourteen schools with a total of 152 classrooms under 197 teachers served 82 organized districts. School buildings compare favorably with schools anywhere in Alberta in terms of modern design and equipment. The schools feature all or many of the following facilities: science laboratories, gymnasium-auditoriums, Industrial Arts and Home Economics laboratories, ancillary or special purpose rooms separated by

¹³Supra, p. 55.

¹⁴Rural Development Branch, op. cit., p. 29.

Table 14

Enrolments in All Grades in All Schools in the High
Prairie School Division Since 1963^a

Year	Grade Enrolments												Total
	1	2	3	4	5	6	7	8	9	10	11	12	
1963	386	314	336	335	307	325	291	212	184	133	107	79	3,010
1964	402	373	350	335	337	327	316	262	195	140	111	106	3,254
1965	416	365	366	328	310	317	315	294	215	128	106	108	3,268
1966	446	375	373	340	304	313	290	269	276	139	106	100	3,331
1967	358	385	336	339	313	273	283	253	211	251	144	104	3,250
1968	420	343	358	322	331	312	267	289	251	273	220	122	3,508
1969	385	379	354	349	314	332	324	265	280	281	212	184	3,659
1970	343	351	348	340	340	301	347	328	285	350	266	199	3,798

^a High Prairie School Division No. 48, Superintendent's Reports, Audited Financial Statements, 1963-1970.

Table 15

Enrolments in High Prairie School Division Schools by
Grades and By Zones September 30, 1970^a

	1	2	3	4	5	6	7	8	9	10	11	12	Total
<u>Zone 1</u>													
Slave Lake (2) ^b	105	77	68	72	86	63	79	66	48	69	47	33	813
Canyon Creek (1)	9	5	10	5									29
Kinuso (1)	26	34	33	29	23	23	21	28	21	41	27	14	320
Faust (1)	22	34	28	24	29	19	29	27	22				234
Joussard (1)	12	21	14	14	14	13	14	17					119
Sub-totals	174	171	153	144	152	118	144	138	91	110	74	47	1,515
<u>Zone 2</u>													
High Prairie (3)	87	81	84	100	80	82	105	90	94	129	80	64	1,076
Sub-totals	87	81	84	100	80	82	105	90	94	129	80	64	1,076
<u>Zone 3</u>													
McLennan (1)	7	14	8	16	13	17	7	11					93
Donnelly (1)	22	23	23	24	26	19	18	23	37	111	112	88	526
Guy (1)	18	16	20	18	18	16	18	22	13				159
Girouxville (1)	27	38	38	25	37	28	56	44	50				343
Jean Cote (1)	8	8	22	13	14	21							86
Sub-totals	82	102	111	96	108	101	99	100	100	111	112	88	1,207
Totals	343	351	348	340	340	301	347	328	285	350	266	199	3,798

^aHigh Prairie School Division No. 48, Superintendent's Report, Audited Financial Statement, 1970, p. 24.

^b() Denotes number of schools.

folding walls, open area, and instructional materials centers. As shown in Table 15, four of the fourteen schools are centralized high schools offering instruction which includes a grade XII program, while the remainder of the schools are either elementary or junior high schools, or a combination of both offering instruction from grades I to IX.

Four additional schools are operated by other authorities whose students feed into the Division's high schools. Table 16 indicates the enrolments in each school by zones.

The number of students attending schools within each zone and subsequently feeding into the four high schools is fairly evenly distributed. As indicated in Table 17, approximately one-third of the total school population attends schools in each of the three zones in the Division.

High Schools

Some regional differences in the breadth and scope of the high school program existed in 1970 although less marked than in previous years. This was due to variations in population density and the extent of centralization within each zone of the Division.

In Zone 3 all high school students attend the G. P. Vanier School, offering an expanded program which includes Matriculation, General Diploma and Business Education courses. In Zone 2 the one high school, E. W. Pratt School, accommodates all the high school students and offers a program similar to that of the G. P. Vanier School. In Zone 1, two small high schools, Kinuso High and E. G. Wahlstrom,

Table 16

Enrolments in Schools Operated by Other Authorities Whose High
School Students Attended the High Prairie School
Division Centralized High Schools
September 30, 1970^a

	1	2	3	4	5	6	7	8	9	10	11	12	Total
<u>Zone 1</u>													
Snith	24	22	23	19	25	21	21	18	22				195
<u>Zone 2</u>													
High Prairie	58	51	54	49	44	46	49	53	55				459
<u>Zone 3</u>													
McLennan	19	23	26	22	25	23	29	27	25				219
Tangent	13	13	11	7	11	8	16	7					95
Totals	114	109	114	97	105	98	115	168	102	0	0	0	968

^aHigh Prairie School Division No. 48, Superintendent's Report, Audited Financial Statement, 1970, p. 21.

Table 17

Student Population Served by High Schools in High Prairie School
Division September 30, 1970^a

	Grade Enrolment												Total
	1	2	3	4	5	6	7	8	9	10	11	12	
Zone 1	198	193	176	163	177	139	165	156	113	110	74	47	1,711
Zone 2	145	132	138	149	124	128	154	143	149	129	80	64	1,535
Zone 3	114	138	148	125	144	132	144	134	125	111	112	88	1,515
Totals	457	463	462	437	445	399	463	433	387	350	266	199	4,761

^aHigh Prairie School Division No. 48, Superintendent's Report, Audited Financial Statement, 1970, p. 21.

offer relatively narrow Matriculation programs and non-patterned selection of electives.

In his 1970 Annual Report¹⁵ to the ratepayers of the High Prairie School Division, the Superintendent of Schools described the high school situation as follows:

Briefly stated, the Division operates two medium sized high schools (250-350 students) representing major centralization offering a type of program which appears to have increased retention rates and met the educational needs of the majority of students. The other two small high schools (80-150 students) continue to operate separately because of the impracticability of centralizing in either one of the centres. It will be increasingly difficult for both these schools to provide suitable opportunities for all the students in the years ahead unless more staff and courses are added in an effort to bolster their programs further. However, financial as well as physical limitations will seriously hamper such a plan of program development for each school.

Teaching Personnel

In 1970 there were 196 teachers on the High Prairie School Division staff giving instruction to 3,798 students. This student-teacher ratio of 19.5 compares favorably with the Alberta average for the same year of 21 students per teacher. Table 19 gives, in condensed form, an indication of the trend in teacher-student load, for the period 1963-1970.

One of the contributing factors to the declining teacher-pupil ratio was the employment of specialist and support personnel in the larger schools. Generally these teachers had four or more years of university training and consequently, as indicated in Table 20, the

¹⁵High Prairie School Division No. 48, Superintendent's Report, Audited Financial Statement, 1970, p. 12.

Table 18

Enrolments and Credit Offering High Prairie School
Division High Schools--1970^a

	Grade Enrolment				Credit Offering
	10	11	12	Total	
<u>Zone 1</u>					
Slave Lake	69	47	33	149	120
Kinuso	41	27	14	82	97
<u>Zone 2</u>					
E. W. Pratt High School	129	80	64	273	240
<u>Zone 3</u>					
G. P. Vanier High School	111	112	88	311	330
Totals	350	266	199	815	

^aHigh Prairie School Division No. 48, Superintendent's Report, Audited Financial Statement, 1970, p. 18.

Table 19

High Prairie School Division Comparison of Enrolments
and Number of Teachers Employed^a

	1963	1964	1965	1966	1967	1968	1969	1970
Stu- dents	3010.0	3243.0	3268.0	3345.0	3275.0	3545.0	3676.0	3798.0
Staff	119.5	132.5	141.3	148.5	145.2	155.5	177.5	196.0
Pupil- teacher ratio	25.1	24.5	23.1	22.5	22.6	22.8	20.6	19.5

^aHigh Prairie School Division No. 48, Superintendent's Report, Audited Financial Statement, 1970, p. 15.

Table 20
Years of University Training High Prairie School
Division Teachers--1970^a

Staff Training	1967		1968		1969		1970	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Less than 2 years	62	41.9%	54	33.4%	72	40.5%	48	24.4%
2 but less than 3	34	21.9	47	29.5	39	21.8	51	25.6
3 but less than 4	21	14.6	21	13.3	24	13.6	21	10.8
4 but less than 5	23	15.8	27	16.9	31	17.4	57	29.0
5 but less than 6	4	2.9	7	4.4	8	4.4	17	8.6
6 years	4	2.9	4	2.5	4	2.3	3	1.6
	148	100.0	160	100.0	178	100.0	197	100.0
Average training	2.7		2.8		2.8		3.2	

^aHigh Prairie School Division No. 48, Superintendent's Report, Audited Financial Statement, 1970 p. 3.

overall average training of teaching personnel increased from 2.7 years in 1967 to 3.2 years of university training in 1970. A total of seventy-seven teachers had four or more years of university training in 1970. This is 39.1 per cent of the total number of teachers. The Alberta average for 1970 was 47.0 per cent.

Student Retention

Although there was only a slight difference in the population of the school age students attending school and the rate at which students left school between the zones in the Division, there was a difference in the level of education attained by those who left school. In Zone 1 56.3 per cent of the students leaving school had Grade 9 or less compared with 34.9 per cent in Zone 2, 28.1 per cent in Zone 3 and 26.1 per cent for rural Alberta. These comparisons are shown in more detail in Table 21.

On the average, students left school in the High Prairie School Division at a faster rate than they did in the rest of rural Alberta in 1969. About 4.2 per cent of the enrolled students left school for destinations other than further education while in rural Alberta 3.9 per cent left and in the cities 3.6 per cent discontinued their education.

Table 21
Percentage of Students Leaving School by
Highest Grade Attended^a

Less than Grade	Percentage			Rural Alberta	Cities of Alberta
	Zone 1	Zone 2	Zone 3		
6	1.5%	1.0%	0.5%	0.9%	0.3%
7	5.0	4.2	2.1	2.5	1.2
8	7.5	7.0	4.4	4.5	2.5
9	42.3	22.7	21.1	18.2	6.6
10	12.9	5.7	9.3	9.7	9.7
11	11.4	10.5	10.0	17.0	14.2
12	19.4	48.9	52.6	47.2	65.5
	100.0	100.0	100.0	100.0	100.0

^aGovernment of Alberta, Department of Education, Annual Report (Edmonton: Queen's Printer, 1967 and 1968), adapted.

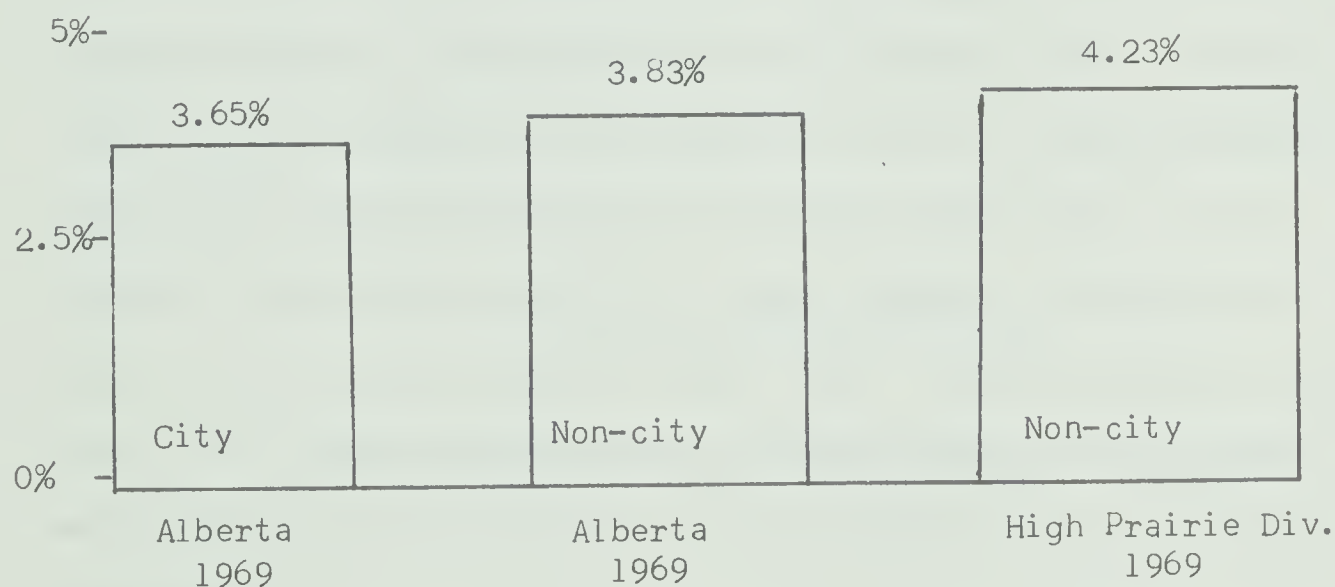


Figure 5

Percentage of Enrolled Students Leaving School
Prior to Graduation^a

^aGovernment of Alberta, Department of Education, Annual Report (Edmonton: Queen's Printer, April, 1969).

Chapter 4

COLLECTION, ORGANIZATION, AND TREATMENT OF DATA

This chapter describes methods used in the gathering and organizing data, the statistical treatment used in the analysis of these data, and a description of the groups involved in the study.

1. COLLECTION OF DATA

The writer had access to all records on students attending school in the High Prairie School Division No. 48. Over a three-year period, periodic audits were made of cumulative records to ascertain that as much information as possible was being recorded by the schools. Monthly reports to the superintendent, from each school, contained a section which required the principal to list all student withdrawals. Lists were constructed and data collection sheets were set up to tabulate information required for these students. Graduates and early school leavers were listed on these forms. School registers, graduation lists, student registration forms and composite examination results were submitted yearly to the Division's central office and used for reference.

The next step in the collection of data was the construction of a matching form which listed age, sex and scholastic ability. The students who graduated were listed on the matching forms and matched with an early school leaver by sex, age, using an 0.50 year interval and

scholastic ability using an 0.50 stanine interval.

Students selected by this procedure for the study group (early school leavers) and for the control group (graduates) were listed on the data information sheets and all data were tabulated for each student (Appendix B).

Sample Selections

The potential study group included 264 early school leavers in the period 1969 to 1971; this was reduced to 181 through matching on scholastic ability, sex and age with students in the control group. The potential control group included 436 graduates during these years.

II. ORGANIZATION OF DATA

The information collected for the girls' study group and the girls' control group, the boys' study group and the boys' control group were coded. This coded data was transferred to data sheets for computer analysis.

III. TREATMENT OF DATA

Several approaches to preliminary analysis were employed. Comparisons were made between boys and girls without regard to the group to which they belonged, to determine if there were significant differences between the sexes on the variables used in the study which might have implications for the analysis of data and the interpretation of results. Chi square was used as the statistical procedure for testing for the significance of difference in distribution on each of the

variables of ethnicity, occupational class of parents, and socio-economic zone between boys and girls in the total sample. The degree of relationship found when the calculated chi-square value fell between one and five per cent, was considered to be significant. Comparisons were also made to show the mean scores for the boys and girls and the combined study groups on scholastic ability, reading ability and attendance. The same procedure was used for the boys and the girls in the combined control groups. Intercorrelations among mean scores on the scholastic ability, reading ability, and attendance were determined for both the control and study groups.

The t test was used to compare the study group and the control group on the variables of attendance, general achievement, reading ability, and English language arts achievement. The chi-square was used to compare the study group and the control group on the variables of socio-economic zone, occupational class of parents, program offered in the school attended, ethnicity, and formal schooling of parents.

IV. SUMMARY OF CHAPTER 4

This chapter outlined procedures in the selection of the samples, methods used in the collection of the data, the statistical procedures used in the analysis of these data, and the organization of results in the presentation of the thesis.

Chapter 5

FINDINGS OF THE STUDY

The purpose of this chapter is to present a description of relevant variables for both the study and control groups, and results of the statistical analysis of data collected in the study. Tables are included to show comparisons between boys and girls, as well as between the study group and control group; information is also provided on the main hypothesis and the nine sub-problems presented as null hypotheses, which were tested by means of the statistical analyses presented in this chapter.

I. DESCRIPTION OF THE SAMPLES

As indicated in Table 22 the total matched sample included three hundred sixty-two students composed of 194 boys and 168 girls; the boys' study group included 97 boys who left school prematurely, while the control group included 97 boys who graduated from high school with a high school diploma. The girls' study group included 84 girls who left school prematurely, and the control group included 84 girls who completed high school with a high school diploma. Study and control groups were matched on scholastic ability using stanine scores to within 0.5 stanine as well as age to within 0.5 years of age.

Table 22
Sampling Distribution by Zone, Sex and Groups

	Boys		Girls		Combined Sexes		
	Study N	Control N	Study N	Control N	Study N	Control N	Total N
Zone 1	31	11	30	11	61	22	83
Zone 2	41	34	34	22	75	56	131
Zone 3	25	52	20	51	45	103	148
Total	97	97	84	84	181	181	362

Socio-Economic Characteristics

This section includes tables which show comparisons of the boys from both the study and control groups with girls, from both the study and control groups. This analysis was made to determine if there were differences between the sexes on the variables used in the study which might have implications for the analysis of data, and the interpretation of results. Table 23 shows a comparison of socio-economic zones for boys and girls. The difference in the distribution of the two groups was not found to be significant.

In regard to occupational class of parents, Table 24, page 81, shows that both the study group and the control group are under-represented in the two highest classes and relatively over-represented in the lower classes. The parents' occupational class for students in the total sample was much the same for the boys' group and the girls' group. Class IV contains the largest frequency with over one-half of the girls and a slightly lower proportion of the boys in this category. None were matched for either sex, whose parents were categorized as belonging in the class I of occupational status. The remaining classes have about the same number of each sex in them, and as a result the difference between the sexes in parents' occupational class was not found to be significant.

When the proportionate distribution of each ethnic group is examined in Table 25, page 82, it is noted that the Native group is under-represented in the total sample. The fact that only 16.0 per cent of the boys and girls of the study group and control group are Native

Table 23

Chi-Square Analysis of Socio-Economic Zone of Boys with Girls
in Both the Study Group and the Control Group

Group	Zone 1		Zone 2		Zone 3		Totals	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
<u>SOCIO-ECONOMIC ZONE</u>								
Girls	41	11.3%	56	15.5%	71	19.6%	168	46.4%
Boys	42	11.6	75	20.7	77	21.3	194	53.6
Total	83	22.9	131	36.2	148	40.9	362	100.0
<u>PERCENTAGE BY SEXES</u>								
Girls		24.4		33.3		42.3	168	
Boys		21.6		38.7		39.7	194	362
<u>PERCENTAGE BY ZONES</u>								
Girls	41	49.4	56	42.7	71	48.0		
Boys	42	50.6	75	57.3	77	52.0		
Total	83		131		148			

Chi-square = 1.150; Probability = 0.5628

Table 24

Chi-Square Analysis of Occupational Class of Parents
of Boys with Girls in Both the Study
Group and Control Group

	Occupational Class					Total	
	I	II	III	IV	V	No.	Per cent
Girls, No.	0	4	20	80	64	168	
Boys, No.	0	3	16	99	76	194	
Total No.	0	7	36	179	140	362	
Total %	0	1.9	9.9	49.4	38.7		100.0
<u>Percentage by Sexes</u>							
Girls	0	2.4	11.9	47.6	38.1	168	
Boys	0	1.5	8.2	51.0	39.2	194	
<u>Percentage by Classes</u>							
Girls (per cent)		57.1	55.6	44.7	45.7		
(No.)		4	(20)	(80)	(64)	168	
Boys (per cent)		42.9	44.4	55.3	54.3		
(No.)		(3)	(16)	(99)	(76)	194	
Total No.	0	7	36	179	140	362	

Chi-square = 1.774; Probability = 0.6205.

Table 25

Chi-Square Analysis of Ethnicity of Boys with Girls
in Both the Study Group and Control Group

Group	Ethnic Group							
	Native		Fr.-Canadian		Eng.-Canadian		Total	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Girls	32	8.8%	57	15.7%	79	21.8%	168	46.4%
Boys	26	7.2	62	17.1	106	29.3	194	53.6
Total	58	16.0	119	32.8	185	51.1	362	100.0

Percentage by sexes

Girls	19.0	33.9	47.0	168
Boys	13.4	32.0	54.6	194

Percentage by Ethnic Groups

Girls	32	55.2	57	47.9	79	42.7
Boys	26	44.8	62	52.1	106	57.3
Total	58		119		185	

Chi-square = 2.919; Probability = 0.2324.

provides some indication of the relatively low proportion of native students graduating from high school.

The three ethnic groups have about the same number from each sex in them, and as a result the difference between the sexes and the mother tongue of students was not a factor.

Scholastic Ability, Grade IX Records, and Attendance

Table 26 shows the mean scores for the boys and girls and the combined study group for the total sample on scholastic ability, reading, language arts, and average achievement in grade IX and attendance. Boys in the study group had a slightly lower mean stanine score in reading and language arts than did the girls, but the average achievement scores were higher for the boys than for the girls. The combined study group's mean scholastic ability stanine of 2.87 is below the median scholastic ability stanine of 3.60 obtained on the grade IX examination by all students on the High Prairie School Division No. 48 in the years 1969, 1970, and 1971. The differences between boys and girls in the study group were not found to be significant on all variables.

The mean scores for the boys and girls in the control group and for the combined control groups for the total sample on scholastic ability, reading, language arts, and average achievement in grade IX, and attendance are presented in Table 27, page 85. The girls' mean reading score was .77 stanine higher than the mean reading score for the boys; this was found to be significant at the 0.05 level. Significant differences were also found between boys and girls in mean language arts scores, average achievement score and attendance.

Table 26

T(t), Test of Mean Scholastic Ability, Reading, Language
Arts and General Achievement Stanine, and Year's
Attendance in Days for Boys, Girls, and
Combined Study Groups

Variables	Study Group N=264		Boys N=132	Girls N=132	Level of Significance P
	Means	S.D.	Means	Means	
Reading	3.042	1.598	2.98	3.10	0.56530
Scholastic Ability	2.877	1.459	2.97	2.78	0.30330
Average Achievement	2.805	1.398	2.69	2.92	0.19533
Language Arts	2.765	1.457	2.67	2.86	0.29274
Attendance	158.121	16.195	157.31	158.93	0.41799

Table 27

T(t) Test of Mean Scholastic Ability, Reading, Language Arts and General Achievement Stanine, and Year's Attendance in Days for Boys, Girls, and Combined Control Groups

Variables	Control Group N=436		Boys N=211 Mean	Girls N=225 Mean	Level of Significance P
	Means	S.D.			
Reading	4.408	1.859	4.01	4.78	0.00001 ^a
Scholastic Ability	4.344	1.662	4.19	4.49	0.06043
Average Achievement	4.256	1.634	4.01	4.49	0.00224 ^a
Language Arts	4.282	1.861	3.76	4.77	0.00001 ^a
Attendance	169.543	13.405	13.61	171.63	0.00075 ^a

^a Significant beyond the 0.05 level.

Comparisons between boys and girls without regard to the group to which they belonged illustrate that there was a difference between sexes on reading and language arts scores and yearly attendance. Table 28 shows that girls had higher mean scores on all variables.

There was no significant difference on scholastic ability between the study and control groups since they were matched using scholastic ability as one of the variables. The comparisons made in this section indicate that there are sufficient differences between boys and girls on variables such as reading, language arts scores and attendance to justify separate analysis for the two sexes.

II. INTERRELATIONS AMONG VARIABLES

In Table 29, page 88, interrelations among mean scores on scholastic ability, reading and attendance are shown for the total sample with a linear correlation coefficient of 0.205 required for significance at the 0.05 level. Scholastic ability and reading scores produced a correlation coefficient of .5348 which was found to be significant at the 0.05 level. Attendance and reading score yielded a correlation of 0.1839 which was found to be not significant. The correlation observed for attendance with scholastic ability was found to be not significant.

The intercorrelation among the same variables for the study group are shown in Table 30, page 89. A significant correlation was observed for reading scores with scholastic ability. A similar significant correlation was observed between the same variables for the

Table 28

T(t) Test of Mean Scholastic Ability, Reading, Language
Arts and General Achievement Stanine and Year's
Attendance in Days for Boys, and Girls
of the Total Sample

Variables	Total Sample N=362		Boys N=194 Mean	Girls N=168 Mean	Level of Significance P
	Means	S.D.			
Reading	3.525	1.661	3.31	3.77	0.0078 ^a
Scholastic Ability	3.256	1.366	3.19	3.33	0.3530
Average Achievement	3.273	1.370	3.22	3.33	0.4636
Language Arts	3.297	1.555	3.02	3.62	0.0001 ^a
Attendance	164.539	15.012	162.48	166.92	0.0049 ^a

^a Significant beyond the 0.05 level.

Table 29

Linear Correlation Matrix for Mean Scores on Scholastic
Ability, Reading Ability and Attendance for
the Combined Study and Control Group

N=362	Correlation Coefficient		
	Reading Ability	Scholastic Ability	Attendance
Reading Ability	1.0000	0.5348 ^a	0.1839
Scholastic Ability		1.0000	0.0532
Attendance			1.0000

^aSignificant beyond the 0.05 level.

Table 30

Linear Correlation Matrix for Mean Scores on Scholastic
Ability, Reading Ability and Attendance for
the Study Group

N=181	Correlation Coefficient		
	Reading Ability	Scholastic Ability	Attendance
Reading Ability	1.0000	0.5725 ^a	0.0699
Scholastic Ability		1.0000	0.0417
Attendance			1.0000

^a Significant beyond the 0.05 level.

control group as shown in Table 31. The coefficient of correlation of attendance with scholastic ability for both the study and control group was found to be well below that required for significance. Although the correlation among reading score and attendance was found to be significant for the study group, the interrelationship was found to be significant to the 0.05 level for the control group.

III. SOCIO-ECONOMIC ZONES

The null hypothesis predicted that there would be no significant difference in the socio-economic zone in which the family of a student resided while in high school, that would help to identify the students who eventually leave school prematurely and those who complete their high school education. Socio-economic zone in this study was defined as the general level of income and living standard within a specific geographic area in the High Prairie School Division. Chi-square was used to test the significance of differences.

Table 32, page 92, shows that more than twice as many control students lived in Zone 3 than study students (103 control group to 45 study group). The other two socio-economic zones had a larger number of study students than control students. Differences between study and control groups was found to be significant.

In the analysis of the boys' study group and boys' control group, presented in Table 33, page 93, there were nearly three times as many study students in Zone 1 than control students and slightly more study students than control students in Zone 2. In Zone 3 an opposite trend

Table 31

Linear Correlation Matrix for Mean Scores on Scholastic
Ability, Reading Ability and Attendance for
the Control Group

N=181	Correlation Coefficient		
	Reading Ability	Scholastic Ability	Attendance
Reading Ability	1.0000	0.5017 ^a	0.2425 ^a
Scholastic Ability		1.0000	0.0637
Attendance			1.0000

^aSignificant beyond the 0.05 level.

Table 32

Chi-Square Analysis of Socio-Economic Zone for the
Study Groups and Control Groups

Group	Zone 1		Zone 2		Zone 3		Totals	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
<u>Socio-Economic Zone</u>								
Study	61	16.9%	75	20.7%	45	12.4%	181	50.0%
Control	22	6.1	56	15.5	103	28.5	181	50.0
Total	83		131		148		362	
<u>Percentage by Groups</u>								
Study		33.7		41.4		24.9	181	
Control		12.2		30.9		56.9	181	
<u>Percentage by Zones</u>								
Study	61	73.5	75	57.3	45	30.4		
Control	22	26.5	56	42.7	103	69.6		

Chi-square = 43.811; Probability = 0.00000, significant beyond the 0.05 level.

Table 33

Chi-Square Analysis of Socio-Economic Zone for the Boys'
Study Group and the Boys' Control Group

Group	Zone 1		Zone 2		Zone 3		Totals	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
<u>Socio-Economic Zone</u>								
Study	31	16.0%	41	21.1%	25	12.9%	97	50.0%
Control	11	5.7	34	17.5	52	26.8	97	50.0
Total	42	21.7	75	38.7	77	39.7	194	100.0

Percentage by Group

Study	32.0	42.3	25.8	97
Control	11.3	35.1	53.6	97

Percentage by Zone

Study	31	73.8	41	54.7	25	32.5
Control	11	26.2	34	45.3	52	67.5

Chi-square = 19.645; Probability = 0.000054, significant beyond the 0.05 level.

was observed, that is, there were twice as many control students than study students. The level of significant difference between the groups was found to be beyond the 0.05 level.

The comparison of the girls' study group and the girls' control group as shown in Table 34 yielded similar results as those of the boys' control and study groups; significant difference beyond the 0.05 level was found between the study and control groups.

In summary, since significant differences were found in the three analyses the null hypothesis as stated was rejected.

IV. ATTENDANCE

The null hypothesis predicted that there would be no significant differences in the attendance records of graduates and the early school leavers. This hypothesis was tested by computing the mean attendance of the grade IX year and determining the significance of the difference using a t test.

Tables 35, 36, and 35, pages 96, 97, and 98, show the results of the analysis. Differences were all found to be significant beyond the 0.05 level. Mean yearly attendance for the control group ranged from nine to ten days higher than for the study group. The most noticeable difference occurred for the girls' control group, whose mean attendance exceeded that of the boys' study group by nearly a full month. Since significant differences were noted in the three analyses the null hypothesis as stated was rejected.

Table 34

Chi-Square Analysis of Socio-Economic Zone for the
Girls' Study Group and the Girls' Control Group

Group	Zone 1		Zone 2		Zone 3		Total	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
<u>Socio-Economic Zone</u>								
Study	30	17.9%	34	20.2%	20	11.9%	84	50.0%
Control	11	6.5	22	13.1	51	30.4	84	50.0
Total	41	24.4	56	33.3	71	42.3	168	100.0
<u>Percentage by Group</u>								
Study		35.7		40.5		23.8	84	
Control		13.1		26.2		60.7	84	
<u>Percentage by Zone</u>								
Study	30	73.2	34	60.7	20	28.2		
Control	11	26.8	22	39.3	51	71.8		

Chi-square = 24.911; Probability = 0.000004, significant
beyond the 0.05 level.

Table 35

T(t) Test of Mean Year's Attendance in Days of Study
Group and Control Group

Variable	Mean		Standard Deviation		t value	P
	Study N=181	Control N=181	Study	Control		
Attendance	159.94	169.13	15.46	13.10	-6.099	0.000001 ^a

^aSignificant beyond the 0.05 level.

Table 36

T(t) Test of Mean Year's Attendance in Days of the
Boys' Study Group and Boys' Control Group

Variable	Mean		Standard Deviation		t value	P
	Study N=97	Control N=97	Study	Control		
Attendance	157.94	167.02	14.99	11.95	-4.665	0.000005 ^a

^aSignificant beyond the 0.05 level.

Table 37

T(t) Test of Mean Year's Attendance in Days of the
Girls' Study Group and the Girls' Control Group

Variable	Mean		Standard Deviation		t value	P
	Study N=84	Control N=84	Study	Control		
Attendance	162.26	171.57	15.76	13.99	-4.048	.00007 ^a

^aSignificant beyond the 0.05 level.

V. GENERAL ACHIEVEMENT

The null hypothesis predicted that there would be no significant difference in the general achievement record between the graduate and the early school leaver. General achievement was determined by averaging the stanines obtained by the student on the Grade IX examinations in science, mathematics, language, literature, social studies, and reading. A t test was used to determine the significance of differences between the mean stanines. Tables 38, 39, and 40, pages 100, 101, and 102, show an analysis of the combined study and control groups, a comparison of the boys' study and control groups and a comparison of the girls' study and control groups. Since significant differences at the .05 level were found in two of the three analyses, the null hypothesis as stated was rejected.

Because Table 39, page 101, comparing boys' study and control groups did not show a significant difference, a further check was made on data collected and the analysis of this particular variable. It was noted that the mean science stanine for the boys' study group was 3.43 compared with 3.29 for the boys' control group. The data excluding the science stanines showed a significant difference at the 0.05 level.

Table 38

T(t) Test of Mean Stanine of General Achievement of the
Study Group and the Control Group

Variable	Mean		Standard Deviation		t value	P
	Study N=181	Control N=181	Study	Control		
General Achievement	3.13	3.42	1.36	1.37	-2.000	0.0462 ^a

^aSignificant beyond the 0.05 level.

Table 39

T(t) Test of Mean Stanine of General Achievement of Boys'
Study Group and Boys' Control Group

Variable	Mean		Standard Deviation		t value	P
	Study N=97	Control N=97	Study	Control		
General Achievement	3.16	3.28	1.31	1.33	-.626	0.5319

Table 40

T(t) Test of Mean Stanine of General Achievement of Girls'
Study Group and Girls' Control Group

Variable	Mean		Standard Deviation		t value	P
	Study N=84	Control N=84	Study	Control		
General Achievement	3.09	3.57	1.43	1.41	-2.202	0.0290 ^a

^aSignificant beyond the 0.05 level.

VI. PROGRAM

The null hypothesis stated that there would be no significant differences in the total credit offering of high schools which the student attended that would help to distinguish the students who left school prematurely and those who completed their high school education. Four types of programs were defined, using as the criteria the total credit offering of each program. Types 1 and 2 programs were typically matriculation in nature with single course option offering. Types 3 and 4 programs offered both the diploma and matriculation pattern with the latter branching out to include vocational courses. Chi-square was used to test the significance of differences in the distributions.

In the analysis of the study group and the control group in Table 41, it was noted that type 4 program had nearly three times as many control group students as study group students, whereas the number of study group students outnumbered control group students in the other three program types. More than half of the control group students graduated from a type 4 program. Further, type 3 and type 4 programs collectively accounted for over 87 per cent of the control group students and 66 per cent of the study group students; type 1 and type 2 programs together accounted for 34 per cent of study group students and 12 per cent of control group students. A significant difference beyond the 0.05 level was found when the various groups were compared on this variable.

A similar distribution for the boys' study and control group was noted. Table 42, page 105, illustrates that more than half of the

Table 41

Chi-Square Analysis of Program Offered in School for the
Study Group and the Control Group

Group	Program Types								Totals	
	Type 1 No.	Per cent	Type 2 No.	Per cent	Type 3 No.	Per cent	Type 4 No.	Per cent	No.	Per cent
Study	26	7.2%	36	9.9%	78	21.5%	41	11.3%	181	50.0%
Control	6	1.7	16	4.4	56	15.5	103	28.5	181	50.0
Totals	32	8.9	52	14.3	134	37.0	144	39.8	362	100.0
<u>Percentage by Groups</u>										
Study		14.4		19.9		43.1		22.7		181
Control		3.3		8.8		30.9		56.9		181
<u>Percentage by Types</u>										
Study	26	81.3	36	69.2	78	58.2	41	28.5		
Control	6	18.8	16	30.8	56	41.8	103	71.5		
Total	32		52		134		144			

Chi-square = 50.499; Probability = 0.000000 significant beyond the 0.05 level.

Table 42

Chi-Square Analysis of Program Offered in School for the
Boys' Study Group and the Boys' Control Group

Group	Program Types								Totals	
	Type 1		Type 2		Type 3		Type 4			
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Study	16	8.2%	16	8.2%	42	21.6%	23	11.9%	97	50.0%
Control	4	2.1	7	3.6	34	17.5	52	26.8	97	50.0
Total	20	10.3	23	11.8	76	39.1	75	38.7	194	100.0
<u>Percentage by Groups</u>										
Study		16.5		16.5		43.3		23.7	97	
Control		4.1		7.2		35.1		53.6	97	
<u>Percentage by Types</u>										
Study	16	80.0	16	69.6	42	55.3	23	30.7	97	
Control	4	20.0	7	30.4	34	44.7	52	69.3	97	
Total	20		23		76		75		194	

Chi-Square = 22.777; Probability = 0.000045, significant beyond the 0.05 level.

boy graduates in this study attended a school offering type 4 program. The level of significance was found to be beyond the 0.05 level.

The analysis of the girls' study and control groups, presented in Table 43, showed a significant degree of difference, with type 4 program accounting for 60 per cent of the girl graduates and type 1 program graduating less than three per cent of the total girls' control group.

In summary, significant differences were found in the three analyses; the null hypothesis as stated was rejected.

VII. OCCUPATIONAL CLASS

The null hypothesis stated there would be no significant differences in the occupational class of the parents of the early school leaver and the graduate. Parents' occupational class was determined by means of a scale developed by Blishen.¹ Ranking was determined according to income and years of schooling. The scale also reflected Blishen's awareness of the relative prestige ranking of occupations. Each group was distributed according to the five occupational classes. When the proportionate distribution of the control and study groups in each class was examined in Table 44, page 108, it was noted that study group students were under-represented in the four highest classes and comparatively over-represented in the lowest class (26.0 per cent).

¹B. R. Blishen, et al., Canadian Society Sociological Perspective (Toronto: The MacMillan Company of Canada Ltd.), 1961, p. 480.

Table 43

Chi-Square Analysis of Program Offered in School for the
Girls' Study Group and the Girls' Control Group

Group	Program Types									
	Type 1		Type 2		Type 3		Type 4		Total	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Study	10	6.0%	20	11.9%	36	21.4%	18	10.7%	84	50.0%
Control	2	1.2	9	5.4	22	13.1	51	30.4	84	50.0
Total	12	7.1	29	17.3	58	34.5	69	41.1	168	100.0
<u>Percentage by Groups</u>										
Study	11.9		23.8		42.9		21.4		84	
Control	2.4		10.7		26.2		60.7		84	
<u>Percentage by Types</u>										
Study	10	83.3	20	69.0	36	62.1	18	26.1		
Control	2	16.7	9	31.0	22	37.9	51	73.9		
Total	12		29		58		69			

Chi-square = 28.668; Probability = 0.000003, significant beyond the 0.05 level.

Table 44

Chi-Square Analysis of Occupational Class of Parents of
the Study Group and the Control Group

Group	I		II		Occupational Class III		IV		V		Total	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Study	0	0.0	0	0.0	14	3.9	73	20.7	94	26.0	181	50.0
Control	0	0.0	7	1.9	22	6.1	106	29.3	46	12.7	181	50.0
Totals	0	0.0	7	1.9	36	10.0	179	49.5	140	38.7	362	100.0
<u>Percentage by Groups</u>												
Study		0.0		0.0		7.3		40.3		51.9	181	
Control		0.0		3.9		12.2		58.6		25.4	181	
<u>Percentage by Class</u>												
Study	0	0.0	0	0.0	14	38.9	73	40.8	94	67.1		
Control	0	0.0	7	0.0	22	61.1	106	59.2	46	32.9		
Totals	0		7		36		179		140			

Chi-square = 31.319; Probability = 0.000001, significant beyond the 0.05 level.

The degree of significant difference was found to be beyond the 0.05 level.

Table 45 indicates that nearly three times as many boys in the control group had parents who were categorized as class II and class III occupations than study group boys. Nearly 90 per cent of the study group boys had parents whose occupations were categorized as class IV and class V. The degree of significant difference was found to be beyond the 0.05 level. Similarly, when the girls' study group and girls' control group were compared as shown in Table 46, page 111, a significant difference was found.

On the basis of this evidence the null hypothesis as stated was rejected.

Because the distribution of students in the three analyses showed no students of parents categorized in the highest class of occupations (class I), a further check was made on data collected and the analysis of this particular variable. The control group data, prior to matching, showed that 10 per cent of the control students had parents categorized in class I of occupations. The study group data, prior to matching, showed that none of the early school leavers had parents categorized in this particular class of occupations.

Table 45

Chi-Square Analysis of Occupational Class of Parents of the
Boys' Study Group and the Boys' Control Group

Group	I		II		Occupational Class				IV		V		Total	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Study	0	0.0	0	0.0	5	2.6	44	22.7	48	24.7	97	50.0		
Control	0	0.0	3	1.5	11	5.7	55	28.4	28	14.4	97	50.0		
Total	0	0.0	3	1.5	16	8.3	99	51.1	76	39.1	194	100.0		
<u>Percentage by Groups</u>														
Study	0.0		0.0		5.2		45.4		49.5		97			
Control	0.0		3.1		11.3		56.7		28.9		97			
<u>Percentage by Class</u>														
Study	0	0.0	0	0.0	5	31.3	44	44.4	48	63.2				
Control	0	0.0	3	100.0	11	68.8	55	55.6	28	36.8				
Total	0		3		16		94		76					

Chi-square = 11.735; Probability = 0.008347, significant beyond the 0.05 level.

Table 46

Chi-Square Analysis of Occupational Class of Parents of the
Girls' Study Group and the Girls' Control Group

Group	I	II	Occupational Class				V		Total	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Study	0	0.0	0	0.0	9	5.4	29	17.3	46	27.4
Control	0	0.0	4	2.4	11	6.5	51	30.4	18	10.7
Total	0	0.0	4	2.4	20	11.9	80	47.7	64	38.1
<u>Percentage by Groups</u>										
Study	0.0		0.0		10.7		34.5		54.8	
Control	0.0		4.8		13.1		60.7		21.4	
<u>Percentage by Classes</u>										
Study	0	0.0	0	0.0	9	45.4	29	36.3	46	71.9
Control	0	0.0	4	100.0	11	55.0	51	63.8	18	28.1
Total	0		4		20		80		64	

Chi-square = 22.500; Probability = 0.000051, significant beyond the 0.05 level.

VIII. PARENTS' FORMAL SCHOOLING

The null hypothesis stated that there would be no significant differences in the grade level reached by the parents of the early school leaver and the graduate. This hypothesis was tested for the various samples by computing the chi-square to test the significance of differences in the distribution.

In the analysis of the study group and the control group in Table 47 it was noted that there were more than twice as many early school leavers with parents who had completed less than six years of formal education than graduates, whereas more than twice as many graduates had parents who had taken ten years or more of formal education than early school leavers.

Table 48, page 114, shows a similar trend in distribution. None of the study boys' parents had graduated from a secondary school; and three times as many control boys as study boys had parents who had completed at least ten years of formal schooling.

The analysis of the girls' study and girls' control groups, presented in Table 49, page 115, shows that the difference in distribution was significant beyond the 0.05 level. However, a closer relationship was noted in the post grade IX parent schooling cell frequencies in this analysis than in the boys' study and boys' control group computations.

In summary, the differences between the various groups were found to be significant in the three analyses; the null hypothesis as stated was rejected.

Table 47

Chi-Square Analysis of Grade Level Attained by Parents of the
Study Group and the Control Groups

Group	2	3	4	5	6	Grade Level				11	12&+	Total
						7	8	9	10			
Study	1	5	4	5	52	13	40	30	21	8	2	181
Control	0	1	3	0	28	23	25	44	34	17	6	181
Total No.	1	6	7	5	80	36	65	74	55	25	8	362
%	0.3	1.7	1.9	1.4	22.0	10.0	17.9	10.5	15.3	6.9	2.3	100.0
<u>Percentage by Groups</u>												
Study	0.6	2.8	2.2	2.8	28.7	7.2	22.1	16.6	11.6	4.4	1.1	
Control	0.0	0.6	1.7	0.0	15.5	12.7	13.8	24.3	18.8	9.4	3.3	
<u>Percentage by Grade Levels</u>												
Study % N ()	100.0 (1)	83.3 (5)	57.1 (4)	100.0 (5)	65.0 (52)	36.1 (13)	61.5 (40)	40.5 (30)	38.2 (21)	32.0 (8)	25.0 (2)	
Control % N ()	0.0 (0)	16.7 (1)	42.9 (3)	0.0 (0)	35.0 (28)	63.9 (23)	38.5 (25)	59.5 (44)	61.8 (34)	68.0 (17)	75.0 (6)	
Total N	0	6	7	5	80	36	65	74	55	25	8	

Chi-square = 19.375; Probability = 0.0357, significant beyond the 0.05 level.

Table 48

Chi-Square Analysis of Grade Level Attained by Parents of the
Boys' Study Group and the Boys' Control Group

Group	Grade Levels										
	2	3	4	5	6	7	8	9	10	11	12&+ Total
Study	0	2	2	2	27	9	25	18	8	4	97
Control	0	0	2	0	16	18	13	16	22	8	97
Total N	0	2	4	2	43	27	38	34	30	12	194
Total %	0.0	1.0	2.1	1.0	22.2	13.9	19.6	17.5	15.5	6.2	100.0
<u>Percentage by Groups</u>											
Study	0.0	2.1	2.1	2.1	27.8	9.3	25.8	18.6	8.2	4.1	50.0
Control	0.0	0.0	2.1	0.0	16.5	18.6	13.4	16.5	22.7	8.2	50.0
<u>Percentage by Grade Levels</u>											
Study %	0.0	100.0	50.0	100.0	62.8	33.3	65.8	52.9	26.7	33.3	50.0
N	0	2	2	2	27	9	25	18	8	4	97
Control %	0.0	0.0	50.0	0.0	37.2	66.7	34.2	47.1	73.3	66.7	50.0
N	0	0	2	0	16	18	13	16	22	8	97
Total N	0	2	4	2	43	27	38	34	30	12	194

Chi-square = 23.588; Probability = 0.0050, significant beyond the 0.05 level.

Table 49

Chi-Square Analysis of Grade Level Attained by Parents of the
Girls' Study Group and the Girls' Control Group

Group	2	3	4	5	6	7	8	9	10	11	12&+	Total
Study	1	3	2	3	25	4	15	12	13	4	2	84
Control	0	1	1	0	12	5	12	28	12	9	4	84
Total	1	4	3	3	37	9	27	40	25	13	6	168
Total %	0.6	2.4	1.8	1.8	22.0	5.4	16.1	23.8	14.9	7.7	3.6	100.0
<u>Percentage by Groups</u>												
Study	1.2	3.6	2.4	3.6	29.8	4.8	17.9	14.3	15.5	4.8	2.4	50.0
Control	0.0	1.2	1.2	0.0	14.3	6.0	14.8	33.3	14.3	10.7	4.8	50.0
<u>Percentage by Grade Levels</u>												
Study %	100.0	75.0	66.7	100.0	67.6	44.4	55.6	30.0	52.0	30.8	33.3	50.0
N	1	3	2	3	25	4	15	12	13	4	2	84
Control %	0.0	25.0	33.3	0.0	32.4	55.6	44.4	70.0	48.0	69.2	66.7	50.0
N	0	1	1	0	12	5	12	28	12	9	4	84
Total N	1	4	3	3	37	4	27	40	25	13	6	168

Chi-square = 19.375; Probability = 0.0357, significant beyond the 0.05 level.

IX. READING ABILITY

The null hypothesis predicted that there would be no significant difference in the reading ability between the early school leaver and the graduate. This hypothesis was tested for the various groups by computing the mean stanine obtained by the students on the grade IX departmental examinations and determining the significance of the difference using a t test.

The results of the analysis are presented in Tables 50, 51, and 52, pages 117, 118, and 119. A difference in reading ability was noted between the study and control groups. Similarly, as shown in Table 52, page 119, a difference was found when the girls' study and control group data were compared.

The analysis of the boys' study and control groups in Table 51, page 118, showed no significant difference; rather there was a close relationship noted in two of the cell frequencies. The same number of study group boys and control group boys obtained a stanine of 3 and 4, therefore the null hypothesis was accepted in this analysis.

In summary, significant differences were found for the combined study and control groups and for the girls' study group and control group. The distribution of the boys' study group and the boys' control group on this variable was not sufficiently different to discount the chance distribution factor. However, since significant differences were noted on two of the three analyses the null hypothesis as stated was rejected.

A comparison between girls and boys in the control group for

Table 50

T(t) Test of Mean Reading Ability Stanine of the
Study Group and the Control Group

Variable	Mean		Standard Deviation		t value	P
	Study N=181	Control N=181	Study	Control		
Reading Ability	3.29	3.76	1.63	1.67	-2.678	0.0077 ^a

^aSignificant beyond the 0.05 level.

Table 51

T(t) Test of Mean Reading Ability Stanine of Boys'
Study Group and Boys' Control Group

Variable	Mean		Standard Deviation		t value	P
	Study N=97	Control N=97	Study	Control		
Reading Ability	3.13	3.48	1.61	1.51	-1.561	0.1201

Table 52

T(t) Test of Mean Reading Ability Stanine of Girls'
Study Group and Girls' Control Group

Variable	Mean		Standard Deviation		t value	P
	Study N=84	Control N=84	Study	Control		
Reading Ability	3.48	4.07	1.66	1.79	-2.249	0.0258 ^a

^aSignificant beyond the 0.05 level.

this variable showed a significant difference (Table 27, page 85); however the same statistical procedure applied, to compare the girls and boys in the study group yielded a level of significance below the 0.05 level (Table 26, page 84). A further check of the original data revealed that the boys in the combined control and study groups had a reading stanine level slightly less than one-quarter of a point higher than the mean achieved by the girls' study group. It was also noted that the widest variation in achievement by all students in this study was found to be in reading. The standard deviations were 1.66 stanine in reading compared to 1.37 stanine in general achievement (Table 28, page 87) and 1.55 stanine in the language arts (Table 28, page 87).

X. ENGLISH LANGUAGE ARTS

The null hypothesis predicted that there would be no significant difference in the English language arts achievement of early school leavers and graduates. A t test was used to determine the significance of difference in the mean stanine rating in English language arts obtained by students in the various groups on the grade IX departmental examinations.

Tables 53, 54, and 55, pages 121, 122, and 123, show that all differences were significant beyond the 0.05 level. The mean stanine for the control group was one-half a stanine higher than those of the study group. The most noticeable difference occurred for the boys' study group and control group. In view of these results the null

Table 53

T(t) Test of Mean English Language Arts Stanine of the
Study Groups and the Control Groups

Variable	Mean		Standard Deviation		t value	P
	Study N=181	Control N=181	Study	Control		
English Language Achievement	3.05	3.55	1.50	1.58	-3.090	0.00215 ^a

^aSignificant beyond the 0.05 level.

Table 54

T(t) Test of Mean English Language Arts Stanine of the
Boys' Study Group and the Boys' Control Group

Variable	Mean		Standard Deviation		t value	P
	Study N=97	Control N=97	Study	Control		
English Language Achievement	2.79	3.24	1.48	1.45	-2.151	0.0326 ^a

^aSignificant beyond the 0.05 level.

Table 55

T(t) Test of Mean English Language Arts Stanine of the
Girls' Study Group and the Girls' Control Group

Variable	Mean		Standard Deviation		t value	P
	Study N=84	Control N=84	Study	Control		
English Language Achievement	3.35	3.90	1.47	1.65	-2.294	0.0230 ^a

^a Significant beyond the 0.05 level.

hypothesis as stated was rejected.

XI. ETHNICITY

The null hypothesis predicted that there would be no significant difference in the ethnicity of the parent of the early school leaver and the graduate. In categorizing parent ethnic status, the criterion used was the household language for communication or more commonly referred to as mother tongue. Chi square was used to test the significant differences in the distribution on this variable.

In the analysis of the study group and the control group in Table 56, it was noted that nearly 85 per cent of the boys and girls whose home language was Cree were early school leavers. A nearly opposite relationship was noted between study students and control students whose home language was French. In this ethnic group 70 per cent of the boys and girls were graduates. Students whose home language was English were distributed on approximately a 50-50 basis among the graduate and early leaving groups.

The difference in the distribution of students for this variable was significant beyond the 0.05 level.

Table 57, page 126, illustrates a similar trend in distribution for the boys' study and control groups. The significant difference was found to be beyond the 0.05 level.

In the analysis of the girls' study and control groups presented in Table 58, page 127, it was noted that as many control group girls were of parents categorized as French speaking, than the combined total

Table 56

Chi-Square Analysis of Ethnicity for the
Study Groups and Control Groups

Group	Native		Ethnic Group Fr.-Canadian		Eng.-Canadian		Total	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Study	49	13.5%	38	10.5%	94	26.0%	181	50.0%
Control	9	2.5	81	22.4	91	25.1	181	50.0
Total	58	16.0	119	32.9	185	51.1	362	100.0
<u>Percentage by Group</u>								
Study		27.1		31.9		50.8	181	50.0
Control		5.0		44.8		50.3	181	50.0
<u>Percentage by Ethnicity</u>								
Study	49	84.5	38	31.9	94	50.8	181	50.0
Control	9	15.5	81	68.1	91	49.2	181	50.0
Total	58		119		185		362	

Chi-square = 43.173; Probability = 0.00000, significant beyond the 0.05 level.

Table 57

Chi-Square Analysis of Ethnicity of Boys'
Study Group and Boys' Control Group

Group	Native		Ethnic Group				Total	
	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
Study	22	11.3%	23	11.9%	52	26.8%	97	50.0%
Control	4	2.1	39	20.1	54	27.8	97	50.0
Total	26	13.4	62	32.0	106	54.6	194	100.0

Percentage by Group

Study	22.7	23.7	53.6	97	50.0
Control	4.1	40.2	55.7	97	50.0

Percentage by Ethnic Group

Study	22	84.6	23	37.1	52	49.1	97	50.0
Control	4	15.4	39	62.9	54	50.9	97	50.0
Total	26		62		106		194	

Chi-square = 16.628; Probability = 0.00024, significant beyond the 0.05 level.

Table 58

Chi-Square Analysis of Ethnicity of Girls'
Study Group and Girls' Control Group

Group	Native		Ethnic Group				Total	
	No.	Per cent	Fr.-Canadian		Eng.-Canadian		No.	Per cent
Study	27	16.1%	15	8.9%	42	25.0%	84	50.0%
Control	5	3.0	42	25.0	37	22.0	84	50.0
Total	32	19.1	57	33.9	79	47.0	168	100.0

Percentage by Groups

Study	32.1	17.9	50.0	84	50.0
Control	6.0	50.0	44.0	84	50.0

Percentage by Ethnic Groups

Study	27	84.4	15	26.3	42	53.2	84	50.0
Control	5	15.6	42	73.7	37	46.8	84	50.0
Total	32		57		79		168	

Chi-square = 28.231; Probability = 0.000001, significant beyond the 0.05 level.

Table 59

Summary of Levels of Significant Differences Between the Study Groups and the Control Groups, and Boys and Girls

Variable	Study Group and Control Group N=181 in each group	Boys N=194	Girls N=168
Socio-economic Zone	0.000001 ^a	0.000054 ^a	0.000004 ^a
Attendance	0.000001 ^a	0.000005 ^a	0.000070 ^a
General Achievement	0.046200 ^a	0.531900	0.029000 ^a
Program Offered	0.000001 ^a	0.000045 ^a	0.000003 ^a
Occupational Class	0.000001 ^a	0.008347 ^a	0.000051 ^a
Parent Formal Schooling	0.035700 ^a	0.005000 ^a	0.035700 ^a
Reading Ability	0.007700 ^a	0.120100	0.025800 ^a
English Language Arts	0.002150 ^a	0.032600 ^a	0.023000 ^a
Ethnicity	0.000001 ^a	0.000240 ^a	0.000001 ^a

^aSignificant beyond the 0.05 level.

of students whose parents were either English or Cree speaking. The most pronounced differences in distribution occurred between study group girls of Cree speaking parents and their counterparts in the control group. An opposite trend was noted between study group girls and control group girls of French speaking parents.

On the basis of evidence suggested in the three analyses, the null hypothesis as stated was rejected.

XII. SUMMARY OF CHAPTER 5

This chapter presented an analysis of data that was used to make comparisons between boys and girls on several variables. The results lent support to the advisability of carrying out comparisons between study and control groups for each of the sexes. Table 59, page 128, provides a summary of the findings of the study. The statistical analysis of data tested the main hypothesis and the nine null hypotheses for the sub-problems investigated for the study. It was found that differences were apparent which would aid in distinguishing the early school leaver from the graduate. Therefore the main hypothesis was accepted. Further, the null hypotheses dealing with the variables of reading achievement, language arts achievement, occupational class of parents, program offered, socio-economic zone, general achievement, attendance, formal schooling of parents, and ethnicity were not accepted in this study.

Chapter 6

SUMMARY, CONCLUSIONS, IMPLICATIONS AND PROBLEMS FOR FURTHER INVESTIGATION

The purpose of the study was to investigate the reasons for withdrawal of students prior to graduation from the high schools of the High Prairie School Division No. 48. In terms of Grade IX examination results and other records, socio-economic information about the family and demography of the area in which the family derives its livelihood, the study was designed to obtain evidence that would help in identifying major associated and predictive factors which lead to early school leaving. More specifically, the study sought answers to the following questions:

1. Does a relationship exist between achievement levels in Grade IX in certain subjects and early high school leaving?
2. Does a relationship exist between the size of the high school, in terms of its program offering and supportive services, and its holding power over students?
3. Does a relationship exist between non-English language development experienced during early childhood and early high school leaving?
4. Does a relationship exist between socio-economic status and early school leaving?
5. Does a relationship exist between environmental background

and early high school leaving?

As an outcome of the study it was hoped that potential school leavers might be identified earlier in the school career of the students and that the schools might prevent the eventual fact of withdrawal by recognizing factors which contribute to a student's leaving school prematurely.

The main hypothesis under consideration was that there would be significant differences between early school leavers and graduates when certain selected factors were statistically analyzed. The main hypothesis was tested by applying statistical tests to nine null hypotheses, outlined in Chapter 1, page 10.

I. SUMMARY

The population of the study was the grade 10, 11, and 12 students enrolled in the High Prairie School Division high schools during the school years 1968-69, 1969-70, and 1970-71. The writer had access to all records on students attending school. Over a three-year period, audits were made of cumulative records to ascertain that essential information was being recorded by the schools. Lists were constructed and data collection sheets were set up to tabulate all information required about these students.

Nine problem areas were identified and stated as null hypotheses. Twelve variables were selected that appeared to be related to early school leaving and then were applied to the source of data. The variables of scholastic ability, sex and age were used as control

variables in the study. The nine remaining variables were statistically analyzed for any evidence that might possibly assist in distinguishing the early school leaver from the graduate. These variables were stated as sub-problems in Chapter 1, page 3.

Samples were selected by matching graduates with early school leavers on the variables of scholastic ability, sex and month and year of birth. The students' scholastic ability was measured by the Grade IX High School Entrance departmental scholastic ability test which was written by all students. The total sample included 362 students who were categorized in four sub-groups: boys' study group, boys' control group, girls' study group and girls' control group.

The hypotheses were tested for each of the sub-groups. Variables were coded according to scales established for the study. Frequency tables were constructed from this data and were used to compute means, standard deviations, t values, linear correlation coefficient and chi-square.

The analysis of data was shown by comparing the combined study groups with the combined control groups, the boys' study group with the boys' control group, and the girls' study group with the girls' control group.

II. CONCLUSIONS

When the study group was compared with the control group on the variables of socio-economic zones, attendance, general achievement program offered in the school attended, occupational class of parents, parents' formal schooling, reading ability, English language arts

achievement, and ethnicity, the analyses yielded differences found to be significant at the 0.05 level.

To the extent that the data and findings from statistical procedures of this study are valid and representative of the future high school students of the High Prairie School Division No. 48, the following conclusions may be drawn.

It may be inferred from the findings of this study that there are significant differences between early school leavers and graduates on the above variables. Further, that these variables which may be related to causes of early school leaving, are identifiable prior to the students' entrance into high school.

In the comparison of the boys' study and boys' control groups all the variables showed significant differences except reading ability and general achievement.

When the girls' study group and the girls' control group were compared all of the variables showed significant differences.

In summary, this study indicated that there were a greater number of significant differences for the girls' groups than for the boys' groups when the grade IX examination results were compared. It would follow then, that there may be more variables, as measured by the grade IX examinations, which are useful in predicting success in high school, for girls' than for boys.

It should be pointed out, however, that the differentiation of potential early school leavers from graduates may depend upon a cluster of these variables operating together contributing to the distinction. In addition, because of the complexity of individuals, the same variables

may influence students in different ways and with the added possibility that one or more variables may affect the same student in different ways at different times.

III. DISCUSSION OF FINDINGS AND CONCLUSIONS

The findings and conclusions of this study are discussed under two major categories:

1. Causal factors beyond the direct control of a school system, and
2. Curriculum related and/or school induced causal factors.

Ethnic, Social, Economic and Environmental Factors

The population within each zone of the High Prairie School Division is relatively homogeneous in socio-economic characteristics. The statistics on the prevalence of early school leaving in each zone illustrate the extent to which social and economic factors appear to contribute to the problem of withdrawal. It appears that socially, economically and environmentally disadvantaged students are over-represented in the early school leaving category in this study. The ratio of early school leavers to graduates increased as the socio-economic level decreased from an average level in zone 3 to a poor level in zone 1. It was evident that the locale of each early school leaver/graduate relationship could be distinguished socio-economically from each other by the same lines as those separating the zones in the School Division.

From the evidence found in this study it may be inferred that

the students' personal learning deficits related to the lack of academic, social, emotional and experiential preparedness, do not appear to be generated by the non-English language development experienced in early childhood, if the mother tongue was French. Conversely, the findings appear to indicate that a relationship might exist between the students' personal learning deficits and non-English language development experienced in early childhood, if the mother tongue was Cree. However, the evidence also indicated that the personally deficient Native students appeared to be no more deficient than other non-Native students whose environmental circumstance provided limited social and economic opportunities.

In summary, the evidence derived from this study would then appear to corroborate similar findings¹ reported in the literature which indicate that fundamentally a student's level of readiness to learn is probably influenced to a large degree by environmental factors. There exists, therefore, a good chance that if a student comes from a disadvantaged environment where parents are unable to provide through example or otherwise, encouragement or control of the student's school effort, he will almost be predisposed, as it were, to leave school prematurely. In addition, different values associated with the economic and social activities of the community in which the family lives, and with its connection in the familial property, educational, recreational, and welfare systems as illustrated in the demographic information in

¹Robert J. Havighurst, et al., Growing Up in River City (New York: John Wiley and Sons, Inc., 1962).

Chapter 3, appear to cause students to react and think differently about teachers, the school, and education generally.

Scope of Program and Grade IX Scholarship Factors

Scope of program. The ultimate measure of quality of a high school's program is the extent to which it succeeds or fails in its attempt to accommodate its students.² A student is accommodated, educationally speaking, when he is provided with the opportunity to pursue the program of studies which he "needs." It follows that an investigation of the effectiveness of a program appears to be guided by one question: Does the school offer the sorts of educational programs which hold students until graduation?

The comparisons made for the variable of scope of program offered yielded significant differences between all groups. The lack of carefully patterned course offerings which characterized type I and type II programs may have resulted in aimlessness and lack of interest on the part of the students. Although the type I and II programs included a reasonable matriculation pattern in addition to fragments of general education option (in the form of isolated and often elementary electives), the less able or not academically inclined students had no alternative but to attempt and usually fail the matriculation program or discontinue their studies. Students enrolled in type III programs had the advantage of a reasonable selection of electives; but these

²Lawrence W. Downey, The Small High School, A report of an investigation (Edmonton: The Alberta School Trustees' Association, 1965).

electives were not sufficiently extensive to be patterned into any kind of a systematic preparation for post high school life. Evidence from this study showed that this type of program appeared to give the school a better holding power than type I and II programs. Students who were enrolled in type IV programs had the advantage of selecting electives patterned into reasonable minors in a specific field (typically business).

The interpretation of these findings would appear to indicate that the type of program offered by a school bears a direct relationship to its holding power. It may be, however, that some other factors not identified or controlled could operate to prevent early leaving from a type IV program and conversely operate as the main cause of the inordinate number of early leavers from schools offering type I programs. For example, an attitude of "get them out of my subject" may have prevailed on the part of teachers towards potential early school leavers, caused partly by the concern that such students interfere with the progress of the other students.

Grade IX scholarship. Comparisons between the achievement level of early school leavers and graduates on the reading, English language arts portions of the grade IX examinations, as well as on the grade IX averages, reveal that potential high school graduates were significantly ahead of their early leaver counterparts when they started high school. It was not the purpose of this study to determine what factors accounted for these differences. Clearly however, the pre-grade IX educational experiences, likely at the elementary level, are partially

responsible. But very likely too, causal factors beyond the direct control of the school contributed to the differences. In any case it may be concluded that the potential early school leaver entered high school seriously disadvantaged in terms of specialized patterns of reading and written expression abilities essential for effective learning in all phases of the curriculum.

From the evidence indicated in the study it would appear that the mechanism of reading disability results in pronounced differences in students' success in reading, and it may in many cases be the primary factor in generating and spreading personal distress in students and failure in subjects for which textbooks are the main teaching instrument.

The pattern of relative reading achievement of boys would seem to indicate that this variable is of lesser distinguishing value than other variables. The grade IX reading examination results mean stanines for each of the boys' study and control groups were nearly identical; there were no significant differences between potential boy graduates and potential boy early school leavers. Another pattern which emerged was that the boys in the study were under-achievers in reading compared to the girls, which could account for the relatively lower proportion of boy graduates compared to girls.

In interpreting these results, in terms of identifying distinguishing factors, it would appear that the reading ability variable might be more useful in distinguishing girl rather than boy leavers from graduates.

The marked differences in English language arts achievement suggests that this is a highly useful variable in distinguishing the early school leaver from the graduate. Since the groups were matched on scholastic ability it is evident that the under-achievers in this subject are a particular sub-group of those with low achievement who merit attention.

It would follow that in a total program to meet the early leaving problem, a systematic reading and English written expression improvement program should have a central place.

IV. IMPLICATIONS AND RECOMMENDATIONS

In view of the findings and conclusions of the study the following implications and recommendations appear to be in order:

1. Since this study concluded that the potential early school leaver entered high school seriously disadvantaged in terms of specialized patterns of reading and written expression abilities, it is recommended that provision be made for the development of diagnostic and clinical services whose function would be to identify and treat reading and oral language disabilities at the classroom level early in the child's school career.

2. Inasmuch as a low level of formal schooling of parents appears to be related to the early school leaving of their children it is recommended that provision be made for the establishment of year-round, Division-wide, academic upgrading programs in a selected centre in each zone of the Division, preferably in the same centres as the

four high schools are presently located, to enable the use of these facilities for this purpose. In connection with the above recommendation, consideration should be given by the two agencies presently responsible for adult education in the area, namely, the Provincial Adult Vocational Education Branch of the Department of Education and the Federal Government's Canada Manpower Development Branch, to 'contract out' at cost, the administration, implementation and supervision of such programs, to the High Prairie School Division.

3. Inasmuch as the scope, breadth of program, and extent of supportive services offered by a school appears to bear a direct relationship to its holding power, it is recommended that provision be made to provide the services and opportunities inherent in an "optimum-sized high school" to students of the High Prairie School Division through the development of such a school in a strategic location. An 'optimum-sized high school' being defined as one offering matriculation and general education options, modest technical pattern and comprehensive vocational patterns. In the opinion of the writer an 'optimum-sized high school' in the High Prairie School Division would enrol between 1,000 and 2,000 students. In conjunction with the above recommendation, consideration should be given to the provision of hostel accommodation for students whose homes are not within commuting distance of the optimum-sized high school, and to make provision for express bus service for students to and from their homes each weekend.

4. Inasmuch as the study indicated that students, whose home environment lacked an appropriate experiential and familial milieu, were

over-represented in the early school-leaving category, it is recommended that provision be made for the schools to assume an 'in loco parentis role' through the establishment of guidance services directed toward this group of students. It could serve to:

- (a) offer assistance to these students consistently during their school year,
- (b) assist them to become oriented to the school, and
- (c) identify educational, occupational, and personal needs and plan appropriate programs to care for their needs.

V. TOPICS FOR FURTHER STUDY

A number of areas for further study arose in the mind of the writer during the course of the investigation for this report. Research in these fields would yield valuable information concerning the early school leaving problem.

A longitudinal study might be undertaken of those factors which contribute to early school leaving, to begin from the time the student enters grade I until he reaches the legal school leaving age. Such a study would give an indication of the time of appearance of the factors, and an indication of their importance.

A study could be done of the value systems of early school leavers and graduates. Such a study could be done by comparing the two groups insofar as such things as school, study, work, success, education and home are concerned.

A replication of Hohol's³ 1954 review of world wide studies of why youth leave school might be undertaken. Such a study could provide new insight into the early school leaving problem.

A longitudinal study might be undertaken to determine the effect of pre-primary programs for students of impoverished background, on their future success in school.

³A. E. Hohol, "A Review of the Evidence of Why Youth Leave School" (unpublished Master's thesis, The University of Alberta, Edmonton, 1954).

BIBLIOGRAPHY

BIBLIOGRAPHY

- Alberta Department of Education. Promotion Policies Report. Edmonton: Queen's Printers, 1967. 48 pp.
- Alberta Teachers' Association. "Pupil Progress," Brief to Alberta Royal Commission on Education (April, 1958), 73-90.
- Alexander, Carter, and Arvid J. Burke. How to Locate Educational Information and Data, Fourth Edition. New York: Bureau of Publications, Teachers' College, Columbia University, 1958.
- Allen, Charles M. Combating the Drop-out Problem. Chicago: Science Research Associates, 1956. 47 pp.
- Anderson, Dewey, and Percy E. Davidson. "Occupations and Welfare Levels," in Stanley, W. O. et al. Social Foundations of Education. New York: The Dryden Press, Inc., 1956.
- Atkinson, F. T. "What is Discipline," The Canadian Teacher's Guide, 14:1 (Fall, 1963), p. 4.
- Baker, Harold S. "Changing Purposes and Programmes of the Canadian High School," in Downey Laurence W., and L. Ruth Godwin. The Canadian School: An Appraisal and a Forecast. Toronto: The Macmillan Company of Canada, Limited, 1963.
- Barzun J., and H. F. Graff. The Modern Researcher. New York: Harcourt, Brace and World Inc., 1957.
- Bash, C. E., and E. H. Johnson. "How to Make and Utilize Follow-up Studies of School Learners," Bulletin of the National Association of Secondary School Principals, 40:214-17 (April, 1956).
- Bell, John W. and Arthur S. Green. "Meeting Individual Differences," The American School Board Journal (June, 1957) 23-24.
- Berston, H. M. "The School Drop-out Problem," Clearing House, 35:207-10 (December, 1960).
- Bevington, W. G. "Effect of Age at Time of Entrance into Grade 1 on Subsequent Achievement," The Alberta Journal of Educational Research, IV:1 (March, 1958) 6-16.
- Black, D. B. and H. V. Ulmer. "The Value of the Grade IX Departmental Examinations in Predicting Success at the Grade XII Level." Unpublished Master's thesis, The University of Alberta Edmonton 1953.

- Black, D. B., R. S. McArthur, and J. C. Paterson. "Pupil Personnel in Alberta Secondary School," Monographs in Education, No. 6. University of Alberta, Edmonton, 1961, 44pp.
- Bledsoe, J. S. "An Investigation of Six Correlates of Student Withdrawals from High School," Journal of Educational Research, 1111 September, 1959. 3-6.
- Blishen, Bernard R., et al. Canadian Society Sociological Perspectives. Toronto: The Macmillan Company of Canada Limited, 1961.
- Boggan, Earl J. "What Are the Major Causes of Student Dropouts and What Should the School Do About the Present Condition?" Bulletin of the National Association of Secondary School Principals, 46: 180-84, September, 1962.
- Boston Guidance News. "Intensive Guidance Given Potential High School Drop-outs," Personnel and Guidance Journal, XXXV, May, 1957, 564.
- Brown, Robert J. "How One District Handles Incurrigibles," The Education Digest, December, 1966, 26-27.
- Bruner, Jerome S. The Process of Education. New York: Random House, Inc., 1963.
- Byrne, Richard H. "Beware of the Stay-in-School Bandwagon," Personnel and Guidance Journal, XXXVI, March, 1958, 493-96.
- Callwood, June. "School is for Nancy--Only," Maclean's, 80:1, January, 1957, 16.
- Campbell, Roald F. and Russell T. Gregg. Administrative Behavior in Education. New York: Harper and Brothers, 1957.
- _____, John E. Corbally, and John A. Ramseyer. Introduction to Educational Administration. Boston: Allyn and Bacon, 1958.
- Campbell, William G. Form and Style in Thesis Writing. Cambridge: The Riverside Press, 1954.
- Canada Year Book, 1962. Dominion Bureau of Statistics. Ottawa: Queen's Printer, 1962.
- Canadian Education Association. "School Attendance Regulations," Toronto: Research and Information Division, No. 8, 1961-62, July, 1962, 1-6.
- _____. "The First Report of the Canadian Research Committee on Practical Education," Canadian Education, No. 2, March, 1949, 92pp.

- _____. "Your Child Leaves School," Second Report of the Committee, February, 1950, 127pp.
- Canadian Research Committee on Practical Education. Your Child Leaves School. Toronto: Canadian Education Association, 1950.
- _____. Two Years After School. Toronto: Canadian Education Association, 1951.
- Cantoni, Louis J. "Stay-Ins Get Better Jobs," Personnel and Guidance Journal, XXXIII, May, 1955, 531-33.
- Card, B. Y. A Case Study--Alberta Improvement District. Edmonton: University of Alberta, 1960.
- Cervantes, Lucius F. The Dropout Causes and Cures. Ann Arbor: The University of Michigan Press, 1965.
- Chalmers, J. "Drop-outs in Alberta Schools," Curriculum News Letter, No. 16, Fall, 1961, 6pp.
- Chamberlin, Leslie J. "Automation--Society and the Schools," The American School Board Journal, September, 1962, 7-8.
- Cheal, J. E. Investment in Canadian Youth. An analysis of input-output differences among Canadian Provincial school systems. Toronto: The Macmillan Company of Canada Limited, 1963.
- Coles, S. R. and E. D. Lewis. "Continuous Progress Plan Geared to Pupils' Ability," School Progress, February, 1965, 27-29.
- Cook, Edward S. "An Analysis of Factors Related to Withdrawal from High School Prior to Graduation," Journal of Educational Research, L:191-96, November, 1956.
- Cory, Winnifred. "Sparing the Rod," The Canadian Teacher's Guide, 13:1, Fall, 1962, 1-8.
- Cronback, L. J. Educational Psychology. New York: Harcourt, Brace and Company, 1954.
- Davis, Allison W. and Robert J. Havighurst. Father of the Man. Boston: Houghton Mifflin Company, 1947.
- Davis, Donald A. "An Experimental Study of Potential Dropouts," Personnel and Guidance Journal, XXXX:799-802, May, 1962.
- Deverell, Alfred F. "Educational Needs of the Rocky Mountain School Division." Unpublished Doctoral thesis, Stanford University, California, 1950.

- Dillon, Harold J. Early School Leavers, A Major Educational Problem. New York: National Child Labour Committee, 1946, 94pp.
- DiPasquale, Vincent C. "The Relation Between Dropouts and the Graded School," Phi Delta Kappan, XLVI:3, November, 1964, 129-33.
- Dominion Bureau of Statistics. Bulletin II. Ottawa: Queen's Printer, 1951.
- _____. Organization and Administration of Public Education in Canada. Ottawa: The Queen's Printer, 1960.
- _____. Student Progress Through the School by Grade. Ottawa: The Queen's Printer, 1963.
- Downey, L. W. The Small High School. A report of an investigation. Edmonton: The Alberta School Trustees' Association, 1965.
- Dreskin, Nathan. "What's Ahead for School Dropouts?" The Lethbridge Herald, Weekend Magazine, XIII:34, August, 1963, 2-4.
- _____. "What IQ Tests Don't Tell Us," The Lethbridge Herald, Weekend Magazine, XV:7, February, 1965, 2-6.
- Dresher, Richard H. "Factors in Voluntary Dropouts," The Personnel and Guidance Journal, January, 1954, 63.
- Dunkel, H. B. "Holding Power," School Review, LXV:235-37, June, 1957.
- Dunlop, G.M. "Further Evidence on the Control of Individual Differences in the Classroom," The Alberta Journal of Educational Research, III:2, June, 1957, 104-11.
- Ede, William J. "The Identification of Future School Drop-outs by the Analysis of Elementary School Records." Unpublished Master's thesis, The University of Alberta, Edmonton, 1967.
- Evans, Keith L. "The Academic History of the 1945 Grade IX Class in Their Subsequent High School Careers." Unpublished Master's thesis, The University of Alberta, Edmonton, 1953.
- Ferguson, George A. Statistical Analysis in Psychology and Education. New York: McGraw-Hill Book Company, Inc., 1959.
- Gallagher, Arthur Jr. Planning and Organizing for Teaching. National Education Association of the United States. Washington: Library of Congress, Catalogue No. 63-22768, 1963.
- Good, Carter V. Introduction to Educational Research, Second Edition. New York: Appleton-Century-Crofts, Inc., 1950.

- Good, Carter V., and Douglas E. Scates. Methods of Research Educational, Psychological, Sociological. New York: Appleton-Century-Crofts, Inc., 1954.
- Goodlad, John I. Planning and Organizing for Teaching. National Education Association of the United States. Washington: Library of Congress, Catalogue No. 63-22768, 1963.
- Gordon, Julia W. "Values in the Classroom," The Education Digest, XXVIII:8, April, 1963, 14-17.
- Gragg, William Lee. "Some Factors Which Distinguish Drop-outs from High School Graduates," Occupations, April, 1949.
- Grambs, Jean D. Schools, Scholars, and Society. New Jersey: Prentice Hall, Inc., 1965.
- Gushaty, M. "An Analysis of the Causes of High School Drop-outs in Southern Alberta from 1947 to 1951." Unpublished Master's thesis, The University of Alberta, Edmonton.
- Hall, Calvin S., and Lindzey Gardner. Theories of Personality. New York: John Wiley and Sons, Inc., 1963.
- Hand, Harold C. "Do School Costs Drive Out the Youth of the Poor?" Progressive Education, January, 1951, 89-93.
- Hart, Joseph K. "How the Community Educates," in Stanley, William O. et. al., Social Foundations of Education. New York: The Dryden Press Inc., 1956.
- Havighurst, Robert J., et al. Growing Up in River City. New York: John Wiley and Sons, Inc., 1962.
- Hearn, Arthur C. "Increasing the School's Holding Power Through Articulation," Educational Administration and Supervision, XLII:4, April, 1956, 214,218.
- Hohol, Albert E. "Factors Associated with School Drop-outs," The Alberta Journal of Educational Research, I:1, March, 1955, 7-17.
- _____. "A Review of the Evidence on the Problem of Why Youth Leave School." Unpublished Master's thesis, The University of Alberta, Edmonton, 1954.
- Hollingshead, August B. Elmtown's Youth. New York: John Wiley and Sons, Inc., 1949.
- Holt, John. How Children Fail. New York: Dell Publishing Company, Inc., 1954.

- Horowitz, Lewis. "Meeting the Drop-out Challenge," Viewpoints on Educational Issues and Problems. Philadelphia: University of Pennsylvania, 1952, 382pp.
- Illinois Secondary School Curriculum. "How to Conduct the Holding Power Study," Bulletin 3, May, 1949.
- Keats, John. Schools Without Scholars. Boston: Houghton-Mifflin Company, 1958.
- Kennedy, G. R. "Some Thoughts on Drop-outs," The Clearing House, XXXI, February, 1957, 363-64.
- Kobayana, Joan S. "Acceleration Design or Expedient," The Alberta School Trustee, XXXV:2, May, 1965, 8-9.
- Larson, H. L. "The Five School Project Drop-out Study," The Alberta Journal of Educational Research, IV, December, 1958, 212-15.
- Lazerte, M. E. "Student Retention in Canadian High Schools," The Alberta School Trustee, XXIV:2, February, 1954, 19-23.
- Lent, Ada. "A Survey of the Problems of Adolescent High School Girls," The Alberta Journal of Educational Research, III:3, September, 1957, 127-37.
- Lichter, Solomon O., et al. The Drop-outs. New York: The Free Press of Glencoe, 1962.
- Life Magazine. "Crisis in Education," Five Issues, March 24, 31, April 7, 14, 21, 1958.
- Lindgren, Henry C. Educational Psychology in the Classroom. New York: John Wiley and Sons, 1956.
- Livingstone, A. H. "High School Graduates and Drop-outs," The School Review, LXVI, June, 1958, 195-203.
- MacInnis, M. J. "The Guidance Value of the Grade IX Departmental Examinations and Other Selected Factors in Relation to Matriculation of Composite High School Students." Unpublished Master's thesis, the University of Alberta, Edmonton, 1958.
- Macklem, Len. "I'm Back in School After 24 Years," Canadian Weekly, August, 1965, 6-7.
- Maisel, Albert Q. "They Help Boys Want to Be Educated," The Kiwanis Magazine, November, 1963.

- Marshall, M. V. "The Organization of the Elementary School," in Katz, Joseph (ed.). Elementary Education in Canada. Toronto: McGraw Hill Company of Canada, Limited, 1961.
- McLauchlin, W. A. "The Forgotten 30 Per Cent," Quest, I:1, September, 1963, 9-10.
- McMurtry, John. "We're Wasting Our Money Trying to Help Canada's Delinquent Teenagers," Maclean's, LXXVII:24, December, 1964, 66.
- Merrill, Francis E. Society and Culture. New Jersey: Prentice-Hall Inc., 1961.
- Merton, Robert K. and Robert A. Nisbet. Contemporary Social Problems. New York: Harcourt, Brace and World, Inc., 1961.
- Moon, B. "Two Million Illiterates: Canada's Obsolete Tenth," Maclean's, May 6, 1961, 23, 45-48.
- Morris, Derek V. "Individual Intellectual Needs--Are They Being Met?" The CSA Bulletin, I:2, November, 1961, 18-23.
- Morris, J. "The High Cost of Quitting School," Star Weekly Magazine, January 28, 1961, 2-4.
- Morse, Arthur D. "An Answer to Uniformity--Non-Grading Continuous Progress Plan Eliminates Exams and Age Barriers," The Canadian Teacher's Guide, XII:4, Spring, 1962, 1-2.
- Moysa, W. "A Study of Comparative Value of Prediction Tests Administered in the University High School: 1946-48." Unpublished Master's thesis, The University of Alberta, Edmonton, 1953.
- Murk, Virgil. "A Follow-up of Students Who Drop Out of High School," Bulletin of the National Association of Secondary School Principals, 44, February, 1960, 73-75.
- National Education Association of the United States. "High School Drop-outs," Washington, September, 1959.
- _____, Research Division. "High School Drop-outs," NEA Research Bulletin, 38, February, 1960, 11-14.
- National Employment Service. "Are You Thinking of Leaving School?" Ottawa: The Queen's Printer, 1960.
- _____. "Careers for the Choosing." Ottawa: The Queen's Printer, 1965.
- Nelson, Lester W. "The Drop-out Problem--A Growing Education Concern Today," Bulletin of the National Association of Secondary School Principals, 45, April, 1961, 275-80.

- Nielsen, J. K. "Case Studies of Socially Isolated Males in Senior High School," The Alberta Journal of Educational Research, IX:4, December, 1963, 247-53.
- Nova Scotia Department of Education. "The Potential Drop-out," Nova Scotia Guidance Newsletter, Bulletin 7:3, February, 1953.
- Office of Secondary and Vocational Education of Saint Paul Public Schools. "Second Drop-out Study." Saint Paul, Minnesota: 1961.
- Paton, J. M. "Curriculum and Instruction in 1975," The ATA Magazine, XLVI:2, October, 1965, 16-20.
- Penty, Ruth C. Reading Ability and High School Drop-outs. New York: Teacher's College, Columbia University, 1956. 93pp.
- Phi Delta Kappan. "'Drop-out Study in Syracuse Schools," XLV, November, 1963.
- Pollack, Jack H. "Why Do They Drop Out? The Astonishing Truth About Girl Drop-outs," The Education Digest, XXXII:3, November, 1966, 14-16.
- Pond, Frederick L. "Pennsylvania Study of Drop-outs and the Curriculum," Bulletin of the National Association of Secondary School Principals, 37, March, 1953, 81-87.
- Rancier, Gordon J. "Ten Case Studies of High School Drop-outs in the Acadia School Division." Unpublished Master's thesis, The University of Alberta, Edmonton, 1962.
- Report of the Royal Commission on Education. Province of Alberta. Edmonton: Queen's Printer, 1959.
- Rickover, H. G. "The World of the Uneducated," The Saturday Evening Post, November, 1959, 19, 54-59.
- Royal Bank of Canada. "Outward Bound," The Royal Bank of Canada Monthly Letter, XLV:11, November, 1964, 1-4.
- _____. "The Failing Student," The Royal Bank of Canada Monthly Letter, XLV:11, November, 1964, 1-4.
- Rummel, J. Francis. An Introduction to Research Procedures in Education. New York: Harper and Brothers, 1958.
- Satlow, David. "An Ounce of Prevention." New York: Thomas Jefferson High School. (Mimeographed.)
- Schreiber, Daniel. "Promising Practices Gleaned from a Year of Study," Phi Delta Kappan, XLIV:5, February, 1963, 215-21.

- _____. "The School Drop-out--Fugitive from Failure," Bulletin of the National Association of Secondary School Principals, 46, May, 1962, 233-41.
- _____, et al. Project: School Drop-outs. National Education Association, Washington, D. C., 1964.
- Schuzer, P. "Drop-out Tragedies," Life, May 2, 1960, 106-13, May 9, 1960, 102-09.
- Science Research Association. "Measuring Pupil Achievement," The Canadian Teacher's Guide, XII:3, Autumn, 1961, 5.
- Scott, George D. "I Am Proud of My Son, The Drop-out," The Lethbridge Herald, Weekend Magazine, XVI:24, June, 1966, 2-4.
- Shibler, H. L. "Attacking the Drop-out Problem," National Education Association Journal, 44, January, 1955, 24-26.
- Snepp, D. W. "Can We Salvage the Drop-outs?" The Clearing House, XXXI, September, 1956, 49-54.
- Social Planning Council of Metropolitan Toronto. A Report on School Drop-outs. Toronto: 1961.
- St. Christopher House. School Drop-outs--Our Disinherited Youth. Toronto: 1962.
- Stanley, William O., et al. Social Foundations of Education. New York: The Dryden Press, Inc., 1956.
- State Department of Education. "Improvement of Holding Power," New York: The University of the State of New York, 1952, 56pp.
- Stock, Francis J. "A Quick Method of Predicting Drop-outs," Personnel and Guidance Journal, January, 1954 63pp.
- Stoddard, George D. The Dual Progress Plan. New York: Harper and Row, 1961.
- The Labor Gazette. "School Leavers in the Labor Force," The School Guidance Worker, XV:1, October, 1959, 2-7.
- Thirkill, Evelyn S. "Guidance in the Elementary School." Pocatello, Idaho: School District No. 25. (Mimeographed.)
- Thomas, Robert J. "An Empirical Study of High School Drop-outs," Journal of Educational Sociology, XXVIII, September, 1954, 11-18.
- Travers, R. M. Educational Measurement. New York: The MacMillan Company, 1955.

- _____. An Introduction to Educational Research, Second Edition. New York: The MacMillan Company, 1964.
- Tyler, Leona E. The Psychology of Human Differences. New York: Appleton-Century-Crofts, Inc., 1956.
- _____. Tests and Measurements. New Jersey: Prentice-Hall, Inc., 1963.
- Tyrwhitt, Janice. "Why It's Tought To Be a New Kid on the Street," Weekend Magazine Section, The Lethbridge Herald, September, 1966, 14-16.
- United States Department of Health, Education, and Welfare. "The 1963 Dropout Campaign." Washington: Office of Education, 1964, 1-34.
- _____. "Why Do Boys and Girls Drop Out of School and What Can Be Done About It?" Washington: Government Printing Office, 1950.
- Van Loon, J. W. "The Unit System of Promotion as Developed in Hamilton Schools," Canadian Education, XIII:4, September 1958, 46-51.
- Weiss, Robert S. and David Riesman. "Social Problems and Disorganization in the World of Work," in Merton, Robert K and Robert A. Nisbet. Contemporary Social Problems. New York: Harcourt, Brace and World, Inc., 1961.
- Weldon, Don. "Dropouts Anonymous," Parents' Magazine, May, 1966.
- Wilson, S. "It's Time to Close Our Carnival," Life, March 24, 1958, 36-37.
- Winchell, Donald E. "Compulsory High School Education and the National Interest," The Education Digest, XXVII:8, April, 1962, 30-31.
- Worth, Walter H. "What Research Says About Promotions," Canadian Education, XV:4, September, 1960, 61-70.
- _____. "Two Basic Questions in Organizing Elementary School Staff," The CSA Bulletin, III:3, February, 1964, 3-10.
- _____. "Before Six: Review and Reaction," The Alberta School Trustee, XXXVI:5, December, 1966, 9.
- Yourman, Julius. "The Case Against Group I.Q. Testing," Phi Delta Kappan, XLVI:3, November, 1964, 108-110.

Zeran, Franklin R. "Drop-out Cure: The Elementary Grades," Oregon Education, May, 1962.

Ziel, Henry. "Educating Youth for an Expert Society," in Downey, Lawrence W. and L. Ruth Godwin. The Canadian Secondary School: An Appraisal and a Forecast. Toronto: The Bryant Press Limited, 1963, 47-50.

APPENDIX A

CODING KEYS

CODING KEYS

1. Socio Economic Zone -- Three Point Scale
 1. Poor
 2. Fair
 3. Average
2. Attendance -- actual attendance out of possible attendance of 198 days.
3. Parents Occupational Class -- Based on a five point scale adapted from the Blishen Scale.
 1. Professional managerial; doctor, dentist, businessman, sr. civil servants
 2. Other white collar; salesman, postmaster, teacher, jr. civil servants, police
 3. Blue collar; tradesman, farmer, constructor, foreman, bus driver, trucker, painter
 4. Other blue collar; fisherman, milk ranchers, laborer
 5. Under-employed or unemployed
4. Program -- four point scale
 1. Credit offering 90 - 99
 2. Credit offering 100 - 139
 3. Credit offering 139 - 249
 4. Credit offering 250 - 349

APPENDIX B

DATA ON STUDENTS SELECTED
FOR THE STUDY

Statistical and Coded Information on Students
Selected for the Study

I. D. No. of Student	Variables ^a											
	1	2	3	4	5	6	7	8	9	10	11	12
2D	4	15.1	M	3	6	4	1	4	6	1	150	E
12G	4	14.5	M	3	3	2	1	5	10	1	142	E
45D	3	14.1	M	3	2	3	3	5	10	4	151	F
13G	3	14	M	$1\frac{1}{2}$	1	1	1	4	6	1	139	E
20D	1	14.7	M	1	1	1	3	4	8	4	162	F
14G	1	14.9	M	$2\frac{1}{2}$	2	2	1	5	7	1	162	N
28D	2	14.7	F	3	3	2	3	5	10	4	139	F
15G	2	14.9	F	2	5	3	1	5	3	1	180	N
237D	2	15.3	M	2	3	2	1	4	6	2	180	E
50G	2	15.3	M	4	1	3	3	4	6	4	180	F
25D	3	14.8	F	2	2	2	3	4	10	4	164	F
51G	3	14.6	F	3	4	4	3	4	6	4	154	F
30D	4	15.1	F	4	6	4	3	4	10	4	161	E
52G	4	14.11	F	5	2	3	3	4	8	4	183	F
31D	4	14.6	F	3	3	2	3	4	9	4	189	F
53G	4	14.7	F	6	4	5	3	3	11	4	181	F
144D	4	15.2	F	4	4	3	2	4	9	3	147	E
54G	4	15.0	F	6	4	5	3	2	12	4	174	F
162D	3	13.10	M	2	1	3	2	5	8	3	148	E
55G	3	14.0	M	4	3	3	3	3	11	4	167	E
494D	4	14.4	M	6	4	4	1	3	9	1	146	E
58G	4	14.5	M	4	5	5	3	4	8	4	180	F
266D	4	14.0	M	1	4	3	1	5	7	2	186	E
59G	4	14.3	M	5	5	5	3	2	12	4	175	F
412D	5	14.10	F	3.5	4	3.5	2	5	8	3	160	E
61G	5	14.10	F	6	6	4	3	3	11	4	185	F
414D	6	14.6	M	5	4	5	2	4	4	3	145	E

I. D. No. of Student	Variables											
	1	2	3	4	5	6	7	8	9	10	11	12
62G	6	14.7	M	6	5	6	3	4	10	4	168	F
29D	5	14.5	M	5	5	5	3	3	12	4	180	F
63G	5	14.2	F	5	6	4	3	3	11	4	175	F
128D	3	15	M	3	4	4	2	5	7	3	146	E
66G	3	15.3	M	4	4	3	3	5	7	4	160	F
42D	2	14.5	F	1	1	1	3	4	9	156		F
67G	2	14.11	F	3	4	2	3	4	8	4	175	F
1D	5	15.1	M	4	6	4	1	5	9	1	140	E
68G	5	15.0	M	3	5	5	3	5	9	4	180	F
136D	2	14	M	1	1	2	2	5	7	3	152	N
71G	2	14.2	M	1	2	2	3	4	7	4	170	F
250D	1	13.11	M	1	3	1	1	4	11	2	173	E
72G	1	14.0	M	1	1	1	3	5	9	4	165	F
129D	4	15.4	F	3	4	4	2	3	9	3	180	E
73G	4	15.5	F	3	1	2	3	3	10	4	180	F
148D	5	14.0	F	4	5	5	2	5	5	3	162	N
17G	5	14.0	F	3	5	4	3	4	10	4	161	E
238D	5	14.5	M	4	2	4	1	5	6	2	151	N
79G	5	14.7	M	5	4	4	3	5	7	4	145	E
427D	5	16.2	M	5.5	5	4.5	2	4	8	3	156	E
80G	5	16.4	M	2	2	3	3	5	10	4	161	F
616D	4	14.6	M	3	5	4	2	4	8	3	148	E
81G	4	14.6	M	5	4	5	3	4	9	4	160	F
3D	3	16.3	M	2.5	4	3	1	5	3	1	135	N
82G	3	16.0	M	3	3	4	3	4	9	4	154	F
313D	5	14.2	F	4	3	4	1	5	3	2	151	N
83G	5	14.5	F	2	4	3	3	4	8	4	148	F
134D	3	15.1	F	3	1	2	2	5	4	3	171	N
84G	3	15.3	F	5	5	3	3	5	10	4	169	F
147D	3.5	15.0	M	3	3	3	2	5	6	3	160	E



I. D. No. of Student	Variables											
	1	2	3	4	5	6	7	8	9	10	11	12
85G	4	15.0	M	5	4	4	3	4	11	4	171	F
318D	4	15	M	1	2	3.5	3	4	10	4	175	F
86G	4	14.11	M	4	3	2	3	3	10	4	176	E
48D	4	15.3	M	2	1	1	3	4	7	4	171	E
89G	4	15.0	M	5	3	2	3	4	9	4	180	F
38D	4	13.10	F	5	8	4	3	4	8	4	181	F
91G	4	13.9	F	6	5	5	3	4	9	4	180	F
407D	6	14.2	F	4	4	3	2	5	7	3	160	E
93G	6	14.4	F	5	6	5	3	4	9	4	185	F
24D	3	14.5	M	1	3	1	3	5	4	4	145	F
94G	3	14.5	M	4	4	3	3	5	7	4	176	F
132D	3	15.6	M	4	5	6	2	4	9	3	135	E
96G	3	15.4	M	3	5	3	3	4	10	4	176	F
239D	6	14.0	F	6	4	6	1	4	9	2	161	E
98G	6	13.9	F	6	7	6	3	5	6	4	181	F
138D	1	15.6	M	1	2	1	2	4	8	3	143	E
99G	1	15.6	M	1	2	1	3	4	7	4	172	F
395D	5	14.1	F	5	2	4	3	4	9	3	176	F
101G	5	14.2	F	5	6	6	3	4	9	4	181	E
272D	3	14.9	M	3	3	4	1	4	10	2	143	E
102G	3.5	14.7	M	4.5	5	5	3	4	9	4	164	E
154D	2	15.2	M	1	3	2	2	5	6	3	159	N
103G	2	15.4	M	1	2	1	3	4	11	4	180	E
137D	3	15.6	M	2	4	4	2	4	11	3	163	E
104G	3	15.7	M	2	4	4	3	4	7	4	159	E
149D	3	14.2	F	2	4	1	2	5	8	3	171	E
105G	3	14.0	F	2	5	4	3	3	8	4	180	E
236D	3	15	M	2	1	3	1	5	6	2	141	N
106G	3	14.9	M	3	3	4	3	5	9	4	163	F

I. D. No. of Student	Variables											
	1	2	3	4	5	6	7	8	9	10	11	12
416D	1	15.6	M	2.5	2	1	2	5	6	3	142	F
108G	1	15.3	M	2	2	3	3	4	8	3	190	F
308D	4	14.0	M	4	5	4.5	1	5	9	1	165	N
109G	4	14.0	M	4	5	3	3	5	8	4	189	E
424D	3	14.5	M	3.5	4	4	2	4	10	3	165	E
110G	3	13.11	M	4	5	6	3	4	10	4	188	F
273D	6	15.2	F	5	6	7	1	3	12	2	160	E
112G	6	15.3	F	5	8	5	3	5	8	4	176	F
139D	3	15.1	M	3	3	4	2	5	7	3	156	E
113G	3	15.3	M	3	4	3	3	4	7	4	171	E
6D	4	14.3	F	4	3	4	1	5	4	1	175	E
115G	4	14.4	F	4	4	4	3	4	10	4	190	F
527D	6	14	F	5	6	5	3	4	9	4	149	E
116G	6	13.9	F	4	5	6	3	4	10	4	185	F
525D	3.5	15	M	4	3	5	3	4	8	4	153	E
117G	4	14.10	M	4	3	4	3	5	6	2	162	F
163D	2	13.10	M	1	2	3	2	4	9	3	151	E
120G	2	13.8	M	1	2	3	3	5	7	4	141	E
269D	4	14.0	F	5	6	5	1	5	6	2	141	N
122G	4	13.9	F	4	4	4	3	3	8	4	180	F
169D	5	13.8	F	5	6	7	2	5	9	3	180	E
125G	4.5	13.8	F	4	5	4	3	4	10	4	154	E
255D	5	14.0	M	6	8	6	1	3	11	2	161	E
126G	5	14.0	M	6	7	5	3	4	10	4	147	E
521D	4	15.1	F	2.5	2	2.5	1	5	9	2	143	N
127G	4	15.4	F	4	3	4	3	4	11	4	149	F
322D	4	15.4	M	2	2	3	3	5	7	4	150	E
171G	4	15.1	M	3	3	3	2	2	11	3	175	E
36D	7	14.6	F	8	9	7	3	4	8	4	153	F

I.D. No. of Student	Variables											
	1	2	3	4	5	6	7	8	9	10	11	12
172G	7	14.8	F	9	8	7	2	4	8	3	162	E
32D	2	15.3	F	4	1	3	3	4	10	4	148	F
173G	2	15.4	F	4	2	4	2	4	7	3	140	E
16D	4	15.8	F	2	3	3	3	5	6	4	165	N
176G	4	15.5	F	4	6	4	2	3	11	3	190	E
251D	5	14.9	M	4	4	3	1	5	6	2	139	N
177G	5	14.7	M	4	5	5	2	4	10	3	185	E
613D	6	14.5	F	6	5	6	2	4	9	4	160	E
180G	6	14.4	F	4	9	8	2	4	9	3	181	E
9D	2	13.10	F	1	2	1	1	5	5	1	169	E
181G	2	13.10	F	4	6	4	2	4	9	3	182	E
40D	2	15.7	F	1	1	1	3	4	6	4	171	F
182G	2	15.4	F	3	4	2	2	4	9	3	179	E
411D	4	14	F	2	2	3.5	2	4	6	3	155	E
184G	4	13.9	F	5	6	5	2	4	10	3	190	E
622D	4.5	14.10	M	1	5	2	2	5	9	3	146	E
190G	4	14.9	M	3	5	4	2	4	10	3	191	E
316D	2	16	M	3	5	4	2	4	10	3	191	E
194G	3	15.11	M	3	4	3	2	4	8	3	170	E
270D	3	15.2	F	5	4	4	1	5	3	2	161	N
197G	3	15.4	F	5	3	3	2	4	9	3	181	E
146D	4	14.1	F	3	6	4	2	4	10	3	191	E
198G	4	13.11	F	2	5	3	2	4	10	3	184	E
151D	4	14.5	F	5	6	4	2	5	8	3	165	E
205G	4	14.2	F	2	2	3	2	5	6	3	149	E
418D	4	14.9	F	5	3	4	2	4	8	3	149	E
207G	4	15	F	6	6	4	2	4	9	3	165	E
157D	3	15.7	M	2	4	4	2	5	3	3	179	N
212G	3	15.7	M	4	5	3	2	4	10	3	179	E

I.D. No. of Student	Variables											
	1	2	3	4	5	6	7	8	9	10	11	12
159D	3	15.8	M	3	4	3	2	4	10	3	159	E
213G	3	15.7	M	4	5	3	2	4	8	3	179	E
300D	6	15.11	M	3	3	3.5	1	5	8	1	170	F
215G	6	15.6	M	7	3	6	2	4	7	3	191	E
492D	4	15.2	M	2.5	4	3.5	1	5	6	1	159	N
216G	4	14.11	M	5	6	5	2	4	9	3	169	E
246D	4	14.2	F	4	4	4	1	4	10	2	184	E
219G	4	14.0	F	4	5	4	2	3	11	3	190	E
158D	8	14.8	M	8	8	7	2	5	8	3	163	E
221G	8	14.6	M	7	8	7	2	3	12	3	178	E
310D	2	15.7	M	2	1	1.5	1	5	8	2	152	E
223G	2	15.7	M	2	3	2	2	4	7	3	169	E
7D	1	14.5	M	4	2	2.5	1	4	10	1	178	E
224G	1	14.5	M	4	2	2.5	2	4	8	3	164	E
321D	3	17	M	2	1	3	3	4	6	4	140	F
225G	3	17.3	M	2	1	3	2	5	6	3	151	N
133D	3	14.10	F	4	4	3	2	5	8	3	167	E
226G	3	14.11	F	1	3	2	2	5	6	3	149	N
314D	3	14.9	M	2	4	5	3	4	8	2	162	F
227G	3	15.0	M	2.5	4	3	2	4	8	3	167	E
628D	4	15.1	F	4	5	3	2	5	8	3	147	E
228G	4	15.4	F	7	6	5	2	5	6	3	156	E
404D	3	15.4	M	4	4	2.5	2	4	6	3	165	E
230G	3	15.7	M	3	4	3	2	4	10	3	180	E
165D	4	16.0	M	4	5	3	2	5	6	3	149	E
231G	4	15.9	M	4	5	2	2	5	7	3	141	E
306D	5	14.5	M	4.5	4	3.5	1	5	3	1	110	N
232G	5	14.7	M	5	6	5	2	3	9	3	170	E
263D	5	13.0	F	6	6	6	1	3	11	2	170	E

I.D. No. of Student	Variables											
	1	2	3	4	5	6	7	8	9	10	11	12
275G	5	13.3	F	6	4	6	1	4	9	2	160	E
5D	2	15.0	M	2	1	3	1	5	5	1	160	E
276G	2	14.10	M	3	2	3	1	4	10	2	145	E
258D	1	13.10	M	1	1	2	1	5	6	2	141	E
277G	1	14.0	M	1	2	3	1	5	6	2	161	N
47D	3	14.5	F	1	2	2	3	3	10	4	149	F
278G	3	14.6	F	1	2	2	1	5	6	2	150	N
37D	4	14.7	F	4	3	4	3	5	6	4	162	F
279G	4	14.6	F	3	4	4	1	5	6	2	143	N
164D	3	13.10	F	5	5	3	2	5	6	3	140	N
280G	3	14.0	F	4	5	4	1	4	9	2	161	E
135D	3	15.9	F	2	2	2	2	5	6	3	149	N
285G	3	16.0	F	4	4	3	1	4	11	2	165	E
155D	5	14.0	M	5	7	6	2	4	8	3	181	E
286G	5	13.11	M	5	5	4	1	4	10	2	149	E
320D	2	14.0	M	1.5	2	2	3	4	8	4	155	F
289G	2	14.0	M	1	3	2	1	3	11	2	148	E
253D	3	15	F	3	3	4	1	5	6	2	117	N
290G	3	14.11	F	2	2	1	1	4	7	2	159	E
170D	3	13.11	F	5	3	3	2	4	10	3	184	E
291G	3	13.10	F	2	2	3	1	5	6	2	136	N
136D	4	14.6	F	3	3	3	2	4	6	3	175	E
296G	4	14.9	F	3	4	4	1	4	11	2	163	E
264D	3	14.2	F	3	2	2	1	5	6	2	180	N
325G	3	13.11	F	4.5	5	4	3	4	6	4	180	F
405D	7	15.2	M	7.5	7	6	2	4	9	3	155	E
328G	7	15.0	M	4	5	5	3	3	10	4	150	F
315D	4	15.5	M	2	2	3	3	3	11	4	175	F
334G	4	15.5	M	3	2	4	3	5	7	4	164	F

I.D. No. of Student	Variables											
	1	2	3	4	5	6	7	8	9	10	11	12
510D	4	14.7	F	3.5	3	3.5	1	5	6	2	146	N
337G	4	14.4	F	6	5	4	3	4	10	4	185	F
304D	1	16.0	F	1	2	1	1	5	6	1	110	E
338G	1	16.1	F	1.5	2	1	3	2	9	4	190	F
398D	3	15.2	F	2	1	1	2	5	3	3	150	N
339G	3	14.11	F	4.5	2	3	3	2	9	4	191	F
688D	4	14.6	F	3	2	3	1	5	6	1	148	N
341G	4	14.3	F	5.5	5	4.5	3	4	9	4	180	F
419D	3	14.8	F	2	1	3	2	5	6	3	167	N
342G	3	14.7	F	4	4	2.5	3	4	6	4	190	F
35D	2	14.6	F	3	4	3	3	3	11	4	161	F
347G	2	14.9	F	1	1	1.5	3	3	12	4	185	F
248D	6	15.0	M	6	6	5	1	5	9	2	160	E
348G	6	14.10	M	1.5	1	3.5	3	3	11	4	160	F
8D	4	15.8	F	4	5	2	1	5	6	1	162	N
351G	4	15.6	F	4	3	3.4	3	4	7	4	180	E
677D	4	15.6	M	2	2	3	2	5	9	3	151	E
353G	4	15.5	M	1	3	3	3	5	8	4	180	E
516D	3.5	14.8	F	4	4	3	1	4	9	2	148	E
354G	3	14.10	F	1.5	3	2.5	3	4	10	4	178	E
242D	2	14.7	M	2	2	2	1	5	8	2	132	E
359G	2	14.7	M	4	3	2.5	3	5	8	4	170	F
43D	4	16.1	M	3	4	3	3	4	8	4	171	F
363G	4	15.9	M	4	5	6	3	4	10	4	180	F
678D	4	15.3	M	3	4	3	2	4	8	3	151	E
370G	4	15.6	M	3	5	3.5	3	4	7	4	162	F
430D	3	14.3	F	5.5	6	4	2	5	6	3	160	N
371G	3	14.5	F	4.5	6	3	3	4	8	4	180	E
265D	3	14.1	F	4	5	4	1	4	7	2	172	E

I.D. No. of Student	Variables											
	1	2	3	4	5	6	7	8	9	10	11	12
375G	3	14.2	F	5	3	2	3	5	6	4	159	E
679D	1	13.7	M	2	2	4	2	4	9	3	152	E
376G	1	13.7	M	4	3	2.5	3	4	9	4	180	F
240D	4	14.8	F	2	3	3	1	4	10	2	181	E
377G	4	14.5	F	4	2	4	3	4	10	4	185	F
254D	3	14.0	F	4	5	3	1	3	11	2	173	E
380G	3	14.2	F	3	3	3.5	3	4	4	4	185	F
391D	2	15.9	M	2	4	1	3	5	6	4	17.2	F
386G	2	15.11	M	1	2	1.5	3	5	6	4	168	F
401D	3	16	M	2	3	4	2	5	6	3	155	N
390G	3	15.10	M	2	3	2	3	5	4	4	170	F
305D	3	14.4	M	1.5	2	2.5	1	4	9	1	151	F
432G	3	14.1	M	3.5	3	3	2	4	9	3	175	E
393D	3	15.1	M	5	5	4	3	4	8	3	161	F
448G	3	15.1	M	5	4	4	1	5	7	2	170	E
620D	2.5	15	F	3	3	3	2	4	9	3	147	E
451G	3	14.9	F	4	4	3	1	5	8	2	160	E
46D	2	16.4	M	3	3	4	3	5	8	4	162	F
452G	2	16.2	M	3	3	4	1	5	6	2	146	N
153D	3	16.9	M	2	2	1	2	5	6	3	143	N
454G	3	17.1	M	3	4	3	2	4	7	3	164	E
682D	3	14.2	M	4	4	5	2	5	8	3	148	E
457G	3	13.10	M	4	5	4.5	2	3	11	3	180	E
131D	2	14	F	1	2	1	2	5	6	3	143	N
461G	2	14	F	5	5	3.5	2	4	9	3	189	E
421D	3	15.2	M	2	2	3	2	5	5	3	145	N
462G	3	15.2	M	4	4	3.5	2	2	10	3	165	E
519D	4	14.11	F	4	4	3	1	4	10	2	152	E
464G	4	15.1	F	6	7	4.5	2	4	9	3	185	E

I.D. No. of Student	Variables											
	1	2	3	4	5	6	7	8	9	10	11	12
528D	3	15.4	M	3	1	3	3	5	6	4	146	F
465G	3	15.4	M	2	3	3	2	4	8	3	167	E
44D	5	16.4	M	3	2	3	3	3	9	4	182	E
467G	5	16	M	2.5	3	4.5	2	4	10	3	164	E
413D	3	15.9	M	2	1	3	2	5	6	3	180	N
470G	3	15.11	M	5	3	4	2	4	6	3	165	E
406D	4	16	M	4	3	4	2	4	8	3	172	E
476G	4	16.3	M	3.5	1	2.5	2	4	8	3	171	E
302D	1	14	F	2	1	1	1	5	3	1	155	N
477G	1	13.11	F	5.5	6	3.5	2	4	9	3	178	E
262D	4	14.7	F	3	4	4	1	3	10	2	181	E
478G	4	14.4	F	5.5	6	5	2	5	10	3	180	E
624D	3.5	16	M	5	5	4	2	4	9	3	147	E
479G	4	16	M	5	5	4.5	2	4	8	3	175	E
680D	2	14.2	M	1	3	2	2	5	8	3	154	E
481G	2	13.11	M	4	6	4	2	3	10	3	160	E
332D	5	14	M	3	2	4.5	3	4	9	4	160	F
491G	5	14.2	M	4.5	4	3.5	1	5	6	1	143	E
150D	2	14.10	F	1	2	2	2	4	8	3	185	E
505G	2	15	F	4	4	3	1	5	8	1	141	E
428D	3	14.9	M	3	3	4	2	5	6	3	160	N
508G	3	15	M	2	2	2.5	1	5	9	1	149	E
10D	2	16.3	F	3	2	3	1	5	6	1	160	N
535G	2.5	16.1	F	4	1	2	3	4	9	4	152	F
268D	2	15	F	2	3	2	1	5	6	3	159	E
537G	1.5	15.1	F	3	3	3	3	4	6	4	154	F
34D	1	14.3	F	2	3	2	3	4	10	4	159	E
541G	1	14.1	F	3	3	3	3	4	9	4	163	F
319D	2	15	M	2	1	3	3	4	7	4	169	F

I.D. No. of Student	Variables											
	1	2	3	4	5	6	7	8	9	10	11	12
543G	1.5	15.1	M	1	3	1	3	4	9	4	183	F
267D	1	14.8	M	2	2	2	1	4	9	2	184	E
544G	1	14.6	M	2	3	2	3	5	6	4	175	F
490D	2.5	14.5	M	1	2	1	1	5	6	1	142	N
548G	2	14.2	M	2	1	1	3	5	7	4	186	F
410D	1	14.5	M	3	5	2.5	2	4	8	3	160	E
549G	1.5	14.3	M	3	6	4	3	4	10	4	176	E
140D	2	15.9	F	1	1	1	2	5	6	3	161	N
552G	2	15.6	F	3	4	2	3	4	6	4	180	F
271D	4	14.8	F	6	4	4	1	5	8	2	171	E
555G	4.5	14.6	F	7	4	6	3	4	9	4	192	F
309D	1	13.10	F	1	2	2.5	1	5	6	1	120	N
557G	1	13.9	F	1	1	1	3	3	11	4	135	F
615D	3	14.1	F	3	4	3	2	5	8	3	172	E
559G	3.5	14.2	F	2	2	3	3	4	9	4	176	F
621D	3	15.4	M	5	1	3	2	5	6	3	143	N
571G	3	15.5	M	3	2	2	3	4	6	4	159	F
21D	2	14.8	M	2	2	3	3	4	9	4	174	F
572G	2.5	14.6	M	1	2	1	3	5	6	4	185	F
392D	1	14.11	F	4	2	2	3	5	8	3	164	E
574G	1.5	15.1	F	1	1	1	3	3	9	4	182	F
696D	3	14.7	F	3	3	4	1	5	6	1	142	N
576G	3	14.6	F	5	5	5	3	5	7	4	192	F
145D	2	15.3	F	2	3	4	2	4	11	3	185	E
580G	2	15.1	F	2	3	3	3	4	9	4	179	E
626D	3	15.3	M	3	3	4	2	5	6	3	152	N
584G	3.5	15.2	M	3	3	4	3	4	6	4	176	F
168D	3	14.5	M	1	5	3	2	5	6	3	154	E
585G	3	14.6	M	4	2	3	3	4	7	4	183	E

I.D. No. of Student	Variables											
	1	2	3	4	5	6	7	8	9	10	11	12
423D	3	15.3	F	2	2	2	2	5	5	3	160	N
586G	3	15.4	F	1	2	2	3	4	9	4	187	F
689D	3	15.2	M	2	2	3	1	4	8	1	149	E
593G	3.5	15.4	M	1	1	1	3	3	10	4	178	F
235D	1	14.10	M	1	2	1	1	5	6	2	143	N
595G	1	14.6	M	2	2	3	3	5	6	4	183	F
299D	1	15.5	F	1.5	2	1.5	1	5	2	1	160	E
598G	1.5	15.3	F	3	3	3	3	4	9	4	186	F
415D	2	14.7	F	4.5	4	2.5	2	4	8	3	168	E
601G	2.5	14.5	F	4	3	3	3	4	8	4	189	F
22D	1	16.2	M	1	1	1	3	4	10	4	175	F
603G	1.5	16.1	M	1	2	1	3	4	6	4	188	F
429D	1	13.8	F	3	4	2	2	5	8	3	185	N
605G	1.5	13.8	F	3	2	2	3	4	9	4	192	F
152D	2	14.1	F	3	3	2	2	5	6	3	164	N
609G	2	14.3	F	2	2	1	3	4	7	4	185	F
495D	3	13.11	M	2	2	2	1	4	8	1	143	E
635G	3	13.8	M	6	5	4	2	4	9	3	188	E
4D	2	16.8	M	2	2	2	1	4	10	1	145	E
643G	2	16.11	M	4	4	2	2	4	9	3	134	E
681D	1	15.1	M	2	3	2	2	4	6	3	145	E
644G	1	15.3	M	2	3	2	2	5	8	3	176	E
526D	3	15.5	F	4	4	3	3	5	6	4	148	F
647G	3	15.5	F	6	5	4	2	5	9	3	186	E
317D	6	16	M	3.5	5	6	3	4	8	4	164	F
651G	6	16.2	M	5	7	6	2	4	9	3	187	E
18D	3	16.3	M	4	5	3	3	5	9	4	180	F
652G	3	16.1	M	4	4	4	2	4	10	3	180	E
274D	2	14	F	3	3	2	1	4	6	2	171	E

I.D. No. of Student	Variables											
	1	2	3	4	5	6	7	8	9	10	11	12
654G	2	13.11	F	4	6	3	2	4	12	3	187	E
142D	2	15.2	F	2	3	2	2	5	7	3	184	N
656G	2	15.2	F	4	3	2	2	2	12	3	192	E
522D	2.5	15	M	2	2	2	3	4	8	4	141	F
658G	3	15.1	M	3	4	3	2	4	11	3	185	E
629D	3	15.1	F	3	4	2	2	3	10	3	144	E
661G	3.5	15.1	F	5	6	5	2	4	9	3	174	E
257D	3	16	M	2	3	4	1	5	7	2	139	E
664G	3	16.3	M	1	2	2	2	5	6	3	178	E
425D	2	14.8	M	3	2	3	2	5	6	3	149	N
686G	2	14.5	M	3	4	5	2	4	10	3	184	E

- ^a
1. Scholastic Ability
 2. Age
 3. Sex
 4. Language
 5. Reading
 6. Average

7. Zone
8. Occupational Class
9. Grade Level
10. Program
11. Attendance
12. Ethnicity

B29990